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## PREFACE.

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To grow high-class vegetables it is imperative that seeds of the highest order be purchased. It is quite useless to expect the finest vegetables of really good flavour from cheap seeds, that have not been carefully selected, and all "rogues" weeded out and their germinating power tested. The price may be higher, but the result pays over and over again. Nothing is more disappointing than after labour, expense, and attention have been bestowed on a crop to find it of an inferior variety. In the present manual the vegetables are described in alphabetical order. Cultural details for each kind are given, together with a list of those varieties which have proved thoroughly reliable for home consumption, and, if desired, suitable for exhibition. Further, the most suitable manures for each crop on the average soil, and the principal insect and other pests to which it is liable, with the most effective method for prevention and cure, are enumerated.

I have purposely omitted such vegetables as are of purely botanic interest, and which are seldom, if ever, to be found in the average garden, but all really useful kinds are described. It is, therefore, hoped that this little book may prove serviceable not merely to the amateur, for whom it is especially written, but also to the professional gardener. At any rate it is the outcome of some thirty years' practical experience in the cultivation of vegetables for exhibition, the market, and home consumption.

May, 1913.

TREVOR MONMOUTH.

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## INTRODUCTION.

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VEGETABLES are the most valuable of all foods for man, and yet in many gardens they are imperfectly grown, or there is no proper system of cultivation, no attention paid to rotation of crops, and little, if any, attention to intensive culture. Now in making a new or improving an old garden, drainage is most important, and if the soil is naturally wet, drains should be put in about 20ft. apart and about 3ft. to 3½ft. deep, covering them with rough hedge-trimmings, stones, clinkers, or similar material. This greatly assists in keeping the drains clear by permitting water to find its outlet more rapidly. Further, well-drained land is always warmer and more congenial to root action than undrained land. If the soil is resting on a porous subsoil, such as gravel or sand, it is already perfectly drained. Deep digging or trenching is another important operation that can scarcely be over-estimated; it breaks up "pans," facilitates drainage, and gives a much deeper and extended root action, so that if the season is a dry one the roots do not suffer, and the crops are vigorous and healthy in spite of drought; while if the season be a wet one, there is no stagnant moisture. Another point is that vegetables grown on deeply worked soil rarely suffer much from insect or other pests. In nearly every garden, large or small, there is an enormous amount of wasted fertility, due to the non-clearance of exhausted crops. It is far too common to see the stumps of Cauliflower, Broccoli, Lettuce, etc., left in after the heads have been cut. Such still keep growing, and cannot possibly give anything in return. As the head of each is cut the roots and stumps should be promptly pulled out and either given to cattle or pigs or put on a compost-heap. Again, how frequently do we see Kales, Turnips, Saladings, and such like running to seed, impoverishing the soil and making it necessary to manure heavily afterwards.

In these days, when manure is mounting up in price and becoming increasingly more difficult to buy, there should be

some secluded corner where all waste vegetable matter can be heaped to decay. Fallen leaves, grass mowings, burnt garden refuse, manure, etc., should all find their way to this heap, and after being turned about twice they will make splendid material for the garden.

Another point to bear in mind is that one crop should never follow another of its kind. For instance, Cabbage ought not to follow Cauliflower or any of the *Brassica* family. Peas should not follow Peas or Beans, and so on. To allow one crop to succeed another of a kindred nature is a fruitful cause of disease and failure, as the preceding one may have left some pests behind that quickly attack a like successor, to say nothing of the fact that it has also more or less exhausted those particular elements needed in the soil.

Occasionally one hears great stress laid on the importance of the aspect of a vegetable garden, its soil, and convenience for getting manure, but in most places one has to make the most of existing conditions, and really first-rate vegetables and salads are grown in what is usually considered unfavourable positions, clay soils with a northern slope, for example. Whatever the situation may be, there should be shelter, and if there is not any protection from cold cutting winds, this should be provided by planting hedges of *Thuja gigantea*, *Cupressus Lawsoniana*, or Hornbeam. These will grow rapidly on deeply dug ground in which a moderate dressing of well-rotted manure has been worked. The end of March is a good time to plant these hedges. As regards the soil, if this is of a heavy, tenacious character, stable manure, road scrapings, burnt garden refuse, and similar materials will assist in making it more porous. On soils of a more open nature, however, any manure obtainable will do, provided it is free from the weed seeds. In case there is doubt on this point, it is a good plan to put the manure in a heap and let it heat well. Then after being hot for a few days turn it, working the outsides into the centre, and letting it heat again. This will usually kill all the seeds. A judicious use of chemical manures, employed as an aid to natural ones, is most beneficial on nearly all soils. The chief point is to find out what is the best suited for particular soils, and then to use it carefully and in moderation. Any manures of a very soluble nature, such as nitrate of soda and sulphate of ammonia, ought to be applied only when roots are active, and then only in small quantities—1oz. to the square yard is ample for one application. Guano is also best applied while plants are growing freely, but care must be taken that none of these manures fall on the foliage of growing crops. Manures like Basic Slag, Bone Meal, and Superphosphate are usually applied just before a crop is sown or planted. As a general rule, all

light soils are deficient in potash, and as this is an essential plant-food, it may be applied in the form of kainit, or muriate, and sulphate of potash. On heavy land there is usually an abundance of potash, and it would be waste of time and money to apply any, but the potash is not always free, and it may need lime to make it sufficiently available for the roots to seize. No hard and fast rule can be laid down on the use of chemical manures, and the best plan is for one to try experiments on a small scale first.

It is of considerable importance that all vegetable crops be gathered and used immediately they are ready. A few pods of Peas and Beans on a plant going to seed will stop its productiveness; and the same applies to Vegetable Marrows. With other vegetables, too, the quality and flavour are much finer while they are young and tender. We are too much inclined to attach importance to size, which is often obtained at the expense of flavour and nutritive value.

In many gardens, too, we see bush and other fruit trees growing singly in the vegetable quarters; this is bad practice, and unfair alike to the trees and to the vegetables. The digging required mutilates the roots of the bushes and trees, and the shade they give does not improve the vegetables. As a matter of economy, all the fruit should be grown by itself, where it can be protected from birds, and cultivated properly, not competing with the vegetables for existence. The only exception we would make is in the case of the espalier-trained tree by the side of paths.

Elsewhere, I have referred to the far-reaching importance of deep digging and trenching; but here I should like to lay stress upon the fact that the amateur often by his neglect fails to get his ground in the best condition for planting. No garden, which is left in a comparative state of neglect from the time the crops are lifted, say in autumn, till it is required again to be cropped in the spring, can yield anything like a good return. As much digging as possible should be done in autumn and winter and left in the rough. By that means not only is a larger store of moisture conserved for future use, but the frosts and rains combine to bring it into that fine tilth in spring for seed-sowing that means just the difference between first and third-class crops. Frequently the amateur vegetable cultivator does not think of digging until spring is well advanced, and his lost opportunities of the autumn and winter never can be regained.

There is one operation in connection with the successful cultivation of vegetables which is not as zealously practised, or its importance sufficiently recognised by the amateur, as it should be. I refer to the constant use of the hoe. The professional gardener is, of course, thoroughly acquainted with the benefits to be derived from hoeing, and the operation forms

part of his seasonal routine work. The amateur, on the other hand, but seldom comparatively brings the hoe into requisition, and his crops suffer accordingly. Often, too, when he does use the tool it is not at the best season to give full advantage to his labours, for there is even a right and a wrong time to hoe crops with a view to clear them of weeds. If instead of wasting time in his endeavours to supply dribblets of water at irregular periods to the various vegetable crops during dry weather the amateur would keep the soil continually stirred, not only would the ground be cleaner, but the crops would materially benefit. By keeping the surface soil well moved undue evaporation of moisture is for a certainty prevented, and what this means more particularly in a dry season and on light soils should be readily appreciated. All vegetable crops, if they are to be appreciated at table, must be quickly grown : once they are allowed to become stationary they fall a prey to many animal and vegetable foes. Constant hoeing during *dry* weather not only keeps down the weeds, but tends to maintain the crop in an active condition. A good motto, therefore, for the amateur vegetable grower would be less of the hose, which often only tends to cake the top surface, and more of the hoe, the most useful of all tools that the gardener employs.

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# Vegetable Culture for Amateurs.

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## I.—DICTIONARY OF POPULAR VEGETABLES.

### ARTICHOKES.

#### **Globe Artichoke.** (*Cynara scolymus*.)

A Southern Europe vegetable that needs to be grown in a warm and sheltered portion of the garden, quite away from the shade of trees; for, although frequently seen in partially shaded positions, the plants are never so vigorous or productive as those grown fully in the open. Plants are easily raised from seed, but as they do not come true, and many are poor and inferior to the type, it is a far better plan to propagate from the suckers obtained from the collar or neck of the plant. Such suckers take the place of those that flowered the previous year, and it does the old stools good to remove all except about four. Each one should be taken off with a "heel" of the old plant adhering, taking care not to mutilate the stool more than can be avoided.

As a rule, early in April is a suitable time to take off the sucker, which should be trimmed, and the tips of the foliage cut back; while any jagged pieces at the base should also be removed. They should be planted out in rows, 4ft. apart each way, making the soil very firm, and giving a thorough watering immediately after, to settle it and to prevent leaf-flagging. When growing freely, diluted liquid manure applied once a week is very beneficial, thoroughly saturating the soil. Mere dribblets do infinitely more harm than good. Plants thus treated will flower the first year, but it is inadvisable to allow this till the second year. In most parts of this country protection during the winter is necessary. In November the crowns should be covered with strawy manure, bracken, or similar material, which should remain on till the following March, when it may be removed and a mulch of well rotted manure spread over the ground. As a rule, it is better to

discard old stools after the fourth or fifth year, renewing the plantation on fresh ground.

Where it is desired to raise plants from seed, this should be sown in boxes of good soil in frames in March, keeping the frame close till germination is well advanced, gradually admitting more air, planting out permanently early in May, and afterwards treating the plants as advised for suckers.

A deep rich soil is desirable for this Artichoke, and the ground ought to be dug from 2ft. to 3ft. deep, and a liberal application of manure mixed with the soil from the bottom of the trench to the top. When the plants are well established, frequent and thorough soakings of diluted liquid manure are advisable, as the Globe Artichoke revels in plenty of moisture in summer, but not in winter. If there is no stint of moisture in summer, and the heads are picked immediately they are ready, an excellent supply may be obtained for two or three months, or even longer. Chemical manures do not appear to be very beneficial to this plant, as they tend to promote a luxuriant growth until late in the season, and a large proportion of such plants die the following winter. Another cause of losses in winter is not uncovering the plants; during mild weather the covering material should be removed, replacing it when sharp weather again sets in.

*Varieties.*—The large Green Paris Artichoke and Green Provence (a rather taller grower, and very productive) are the best kinds.

*Pests.*—Few, if any, foes seriously attack the Globe Artichoke, and if cultivated well, they will continue healthy and free from such enemies.

### Jerusalem Artichoke. (*Helianthus tuberosus*.)

Being a native of North America, this plant is perfectly hardy everywhere in this country, while it is so accommodating that it will grow on almost any soil, and in situations where few other vegetables will succeed. It is also a capital screen plant. It will thrive in partial shade, and give fairly good results, but when planted in good soil, in a sunny position, the tubers are of large size, and the crop is very heavy.

Its cultivation is a very simple matter. The best method is to dig the land roughly in the winter, incorporating a moderate dressing of manure; then about the middle of March, or as soon after as the soil will work freely, fork the ground over, and plant the tubers in rows 3ft. apart, 15in. in the rows. Very little further attention is needed beyond using the Dutch hoe to keep down weeds. After a time the plants will form such a dense shade that no weeds will have a chance to grow. The yield is so heavy that it is astonishing that the Jerusalem Artichoke is not more universally grown; the labour in cultiva-



tion is so light—merely digging and hoeing, no earthing up, and no insect pests, and so far we have seen no disease in any tubers. The crop is lifted and stored in exactly the same way as Potatoes.

*Varieties.*—The ordinary variety is still the best. After trying the "New White" side by side with the ordinary one, we found it lighter in its crop, and in no manner superior to the other.

### ASPARAGUS. (*Asparagus officinalis*.)

One of our hardiest, earliest, and most indispensable vegetables. Being a native of Europe it is grown far and wide, not being fastidious as to soil provided there is no stagnant water, free drainage, and a moderate amount of plant-food. The old ideas that special beds of fibrous loam and rotted manure, with chemical manures as an adjunct, are indispensable, are exploded, and first-rate Asparagus can be grown with as little trouble as other vegetable crops. It requires a good root-run, and the soil should be trenched quite 2ft. deep; while if heavy and tenacious, strawy manure, road parings, or similar material, will help to make it lighter and more porous. Trenching should be done preferably in autumn and early spring, the soil afterwards being forked over, and the beds laid out 4ft. wide with an 18in. alley or path between, and only about 2in. lower than the beds. The end of March is a suitable time for this. Having prepared the beds, draw a drill about 1in. deep down the centre of it, with another on each side of it 15in. away, thus getting three drills to a bed. In these sow the seed very thinly. As the seedlings get vigorous thin them carefully to 15in. apart in the rows, and commence to feed with diluted liquid manure, allowing no weeds on the beds, and keeping the surface soil constantly moved to prevent evaporation. Where the soil is naturally well drained the seed may be sown on the flat in drills 18in. apart, and not in beds. No "grass" should be cut from plants raised from seed till they are three years old, and then only lightly cut; but in the fourth and following years they may be cut in the usual way.

Another plan is to prepare the soil as already described, making the beds on the flat, and purchasing one, two, or three year old plants, and inserting them the same distance apart as recommended for seedlings, namely, in rows 18in. apart, and 15in. apart in the rows. From the time the Asparagus is lifted till it is replanted, the roots must never become dry: this drying of the roots is a prolific cause of failure. Assuming these old plants are put in, in order to get Asparagus as quickly as possible, it will pay not to cut any "grass" the first year. Another very important point to remember is that the plants

used should actually have commenced to grow—say 1in. or 2in.—before they are got in. Such plants, if the roots are kept moist from the time they are lifted till they are replanted, will all grow, or, at least, 99 per cent. of them will. Beyond keeping down weeds, hoeing, and an occasional good soaking of liquid manure in the summer, there is nothing else required until the late autumn, when the tops are cut down, and the ground is cleaned for the winter. In many places it is customary to give a heavy mulch of manure when the tops are cut off in the autumn; this is wrong practice, as such a mulch tends to keep the beds colder and wetter than they would be if unmulched. Further, winter rains and snow wash all the fertilising portions of the manure into the subsoil or drains, as the roots being dormant cannot take it up; while as the *Asparagus* is a hardy perennial it does not need protection. To be beneficial the mulch should be given at the middle or end of March. At that season roots are active and the plants derive benefit at once from the manure. Not only so, but the manure assists in keeping the soil cool during the heat of summer. Another objectionable practice is to dig between the beds, cutting off a lot of valuable roots, and to plant Lettuce, Cauliflower, or such crops in the alleys; this robs the *Asparagus*, and inflicts upon it much harm.

Cutting should not be continued after the first week in July, otherwise the produce is so weak the following year as to be almost useless. Should the amateur wish to blanch the “grass” on the beds, all that he need do is to put a mound—say 6in. or 8in.—of sand, leaf-mould, or fine earth round the strongest shoots as they appear. Grass thus treated is beautifully blanched, and improved alike in flavour and tenderness.

*Forcing.*—An ideal place for forcing *Asparagus* is a brick pit or a frame, with a flow and return hot-water pipe running round it near the glass. In such a frame *Asparagus* can be grown to keep up a daily supply from November till it is ready to cut in the open again. The inside of the pit should be about 3ft. deep, and in this about 2ft. of straw manure should be placed, or manure and leaves, treading it quite firm. On this should be arranged 3in. of rich, light soil, and on this the *Asparagus* crowns should be thickly laid and covered with another 3in. of fine rich soil. They should then be watered well with warm water, and the frame nearly closed, only a small chink at the top being left for the escape of rank fumes. For a succession another frame—say a two-light one—should be prepared in the same way, and so on once a month till outside “grass” is ready. In forcing *Asparagus* in pits or frames, the soil and temperature should be kept moderately moist by light watering, and syringing on bright mornings, and all the “grass” ought to be cut as it becomes large

enough for use, using the best as a vegetable, and the small thin pieces for soups, etc. The crowns so forced are best thrown away. It is useless attempting to force Asparagus plants less than three years old, as younger plants would throw up their useless growth.

*Manures.*—Asparagus is a gross feeder, and in addition to the mulch in spring of well-rotted manure, and diluted liquid manure, already recommended, the following are exceedingly beneficial: 10z. sulphate of ammonia to the square yard, first about the middle of May, and again in the middle of July. All plants enjoy a change of food, and 10z. of a good grade of guano to the square yard, applied in the middle of June, is excellent. The old plan of putting on agricultural salt at the rate of 40z. to the square yard in April is very good, especially on light, porous soils.

*Varieties.*—For outdoors, Green Canadian, a very large strong-growing variety, and Early Giant French, a heavy cropper. For forcing Mammoth is unequalled; but if another variety is desired a true stock of Conover's Colossal is very good.

*Pests.*—The most serious enemy attacking this crop is the Asparagus Beetle, a lovely little insect of a greenish or blue-black colour, with yellow wing-cases marked with a black cross. The larvæ are bluish-grey, with black extremities, and about  $\frac{1}{4}$  in. long. They feed on the stems, often causing them to die, and thus seriously weakening the plants. Infested shoots should be promptly cut off and burnt, while in the autumn, when the tops are all cut down, they should also be burnt. Infested plants should be thoroughly sprayed or washed with a solution of carbolic soft soap (4oz. dissolved in 1 gall. of hot water) applied as hot as the hand can stand it. This will be deadly to the larvæ, and is not at all dangerous, like Hellebore powder and Paris Green so often recommended. Wireworm and the larvæ of the Cockchafer are the only other pests. For these a frequently moved surface soil and applications of sulphate of ammonia, as already mentioned, will suffice.

**AUBERGINE.** *See Egg Plant.*

**BARBE DE CAPUCIN.** *See Chicory.*

**BEANS.**

**Broad Bean.** (*Faba vulgaris*.)

Though not grown so much as formerly, Broad Beans are still almost indispensable in the private garden. To get very early crops, seeds should be sown in boxes or pans in January, planting out the seedlings later on. A still better plan is to sow them separately in small pots about the middle of January in

pits or frames. When the seeds germinate, the seedlings should be kept cool and near the glass, to induce a sturdy habit. After being gradually hardened off they should be planted out early in March in a single or double row about 8in. from plant to plant, and the rows 2ft. apart. It is advisable to plant in a trench 6in. deep, and immediately after to protect with small spruce fir branches or Scotch Fir. As the weather improves, and the plants become established, the protecting branches will be best removed, and the trench filled up with soil to the ground-level. For later crops, a sowing may be made once a fortnight from February to the middle of April. The Broad Bean will thrive in any soil that has been deeply dug and well manured, a strong soil being the best if made porous.

*Varieties.*—There are several types of Broad Bean—Early Mazagan, the Windsor, and the Seville, or Long-pod. The first has little to recommend it, except its earliness. The Broad Windsor, as it is usually termed, is much esteemed by some, but it is neither so long nor so prolific as the Seville, or Long-pod; Mammoth Windsor is the finest of the Windsor section, and the Improved Windsor, though slightly smaller, is very prolific. Of the Long-pod section a good selection of Green Leviathan will be found perfectly satisfactory, and if sown in succession will give a continuous supply. Harlington Green Wonder is another good cropper, also of excellent flavour.

*Manures.*—On light soils, a mulch of manure, or copious waterings with diluted liquid manure after the blossoms have set will prove beneficial. Failing this, a dressing of 1oz. of Guano of a good grade to the square yard, put on when the pods are forming, will give increased size, and materially help to keep down insect pests.

*Pests.*—One of the worst pests of the Broad Bean is Black Fly, which is more persistent on light than on strong soils. The best remedies consist in keeping the soil constantly hoed, with a liberal diet of liquid or other manures, and spraying the tops of the plants, immediately the insects are noticed, with 2oz. carbolic soft soap dissolved in 1gall. of hot water, and applied warm. The pinching of the tops of the shoots so often practised has no beneficial effect.

### Edible-podded Bean.

A very little known or appreciated bean in this country, not because it is difficult to grow, but because its cooking is so little understood. The culture given for French Beans and Scarlet Runners is exactly suited to the Dwarf and Tall varieties. Mont d'Or, or Butter Bean, is one of the best of the tall section, closely followed by White Pre'dome. Of the Dwarf class Mont d'Or and Flageolet are both excellent.



DWARF FRENCH BEAN.



BROAD BEANS



**French Bean.** (*Phaseolus vulgaris*.)

Formerly known as the Dwarf or French Bean, this section now includes some of the most prolific of climbing varieties admirably adapted for outdoor or forcing purposes. All these Beans like a deep, rich porous soil. If therefore the soil be naturally poor, it should be made suitable by the addition of well-rotted manure, spent hot-bed material, and burnt garden refuse, working this in in January or February to a depth of at least 18in., and afterwards leaving the soil as rough as possible, so that it may be pulverised by the action of the weather.

As the French Bean is a native of South America it is naturally tender, and the middle of April will be early enough to make the first sowing. In preparing the ground, a dressing of soot put on first, and then lightly forked in, will act as a manure and an insecticide. After forking over the ground, draw rather wide drills  $2\frac{1}{2}$ ft. apart, and in these sow a double line of Beans, 6in. apart each way, drawing the soil back into the drills and raking the surface over evenly. If the seed is good a large proportion will germinate, and in that case each alternate plant should be pulled out, leaving the remainder 1ft. apart. It is then advisable to earth up to the first rough leaves; this not only protects the plants but gives them support, and prevents wind-rocking. The after-treatment consists in frequent hoeings and an occasional application of either liquid or chemical manure, taking care also that no pods form seed. If desired, successional crops may be had by sowing once every three weeks until the end of July.

**Varieties.**—There are several first-rate climbing varieties, one of the best being Carter's Successor. Ten-week is another very good variety. Sown in November, and trained on wires near the glass like Cucumbers, it gives a heavy crop from January onwards. There are several varieties of stringless climbing French Beans, but not one that stands out from the rest. Of the ordinary Dwarf French Bean, Sir Joseph Paxton, Monster Negro Longpod, and (for main crop) Canadian Wonder, are all first-rate, while for forcing the Ne Plus Ultra and Sir Joseph Paxton are both very reliable.

**Forcing.**—Provided a few simple precautions are taken, and a suitable house or pit is available, there are few crops more easily forced than the French Bean. In such a house as is employed for Cucumbers or Tomatoes, seeds may be sown in well-drained pots about 10in. in diameter, using a compost of two-thirds good fibrous loam and one-third well decayed manure, well mixed. Five seeds in a pot will be ample, and it is advisable only to about half fill with compost, adding the remainder when the plants are nearly 1ft. high. From the time that the seed germinates till the plants finish bearing it is important

that they are assigned a light position, and also one in which they can be well syringed daily, otherwise they become drawn, leggy, weak, and infested with Red-spider. A temperature of from 60deg. to 65deg. will suit the plants admirably, and if it should run up to 80deg. by sun-heat, all the better. On very cold frosty nights the temperature ought not to fall below 45deg. By sowing a small batch every fortnight, French Beans may be had from Christmas onwards, but it is best to devote one house or pit to these plants, and not to grow them in plant houses or vineries, as they are sure to introduce Red-spider. When the plants begin to set their blossoms, weak liquid manure may be given with advantage every time they are watered, and immediately a plant is exhausted it should be promptly thrown away, and space thus made for more. In February hotbeds may be made up, and frames put on, and after the rank heat has subsided, seeds may be sown 1ft. apart all over them. In frosty or very cold weather protection will be necessary. Such plants will produce crops early in May, or a month before the outdoor sown ones are ready.

**Manures.**—Almost any soluble or quick-acting manure is suitable for French Beans, either outside or under glass. The great thing to observe is to apply it weak and often, rather than in strong doses occasionally. Liquid manure from cattle-sheds, or that made from sheep or poultry droppings is first-class, and when the plants are bearing well Nitrate of Soda, at the rate of 1oz. to a gallon of water, will materially assist in developing the crop. Guano of the best quality, using it once a week, at the rate of 1oz. to the gallon of water, is also good.

**Pests.**—Few pests seriously assail these plants, but Red-spider is a most troublesome enemy under glass, and sometimes outside. A free syringing with clear water is a capital preventative; but if the attack is serious, 2oz. of carbolic soft soap in 1gall. of warm water, well sprayed on both sides of the leaves, is a reliable remedy. On light soils wireworm is often troublesome, and where this is the case we advise deep cultivation in the winter, and in the spring before planting working a good dressing of lime or soot into the soil, with frequent hoeing of the surface all through spring and summer. Very few pests can stand this treatment.

### **Scarlet Runner Bean.** (*Phaseolus multiflorus*.)

A very popular vegetable that may be grown in a variety of ways—as a twiner on the side of walls, as a summer screen-plant, and in the open quarters, where it gets plenty of sun, light, and air, the last giving the finest results. A deep rich soil that has been trenched 2ft. deep during the previous autumn or winter makes an ideal site for the crop. Seed should be sown about the last week in April or the first week in May in



the open, making the drills rather broad, and putting in the seed in double lines, the rows being 5ft. apart or even more if space permits. The plants should finally be thinned, as advised for French Beans—namely 1ft. apart. When the rows are clearly defined through the seeds coming up, it is advisable to draw up a little soil to the plants and put in the stakes; this certainly gives a little protection. For later sowings this is unnecessary, as the weather will be more genial than it is for the early sowings. For very early crops the seed may be sown in single pots or in boxes in frames the first week in April, and afterwards planted out at the end of the month, but very little is gained, and such plants never seem so productive as those sown where they are to grow. Most market gardeners do not trouble about growing Scarlet Runners on stakes; they sow them in rows 3ft. to 4ft. apart, and when they have made about 2ft. to 3ft. of growth, the tops are pinched out—a plan that might be adopted in private gardens, particularly where stakes are difficult to procure.

*Varieties.*—One of the best croppers is Scarlet Emperor; but Ne Plus Ultra is also a prolific bearer, while if a variety that combines beautiful flowers with good cropping qualities is required Painted Lady cannot be excelled.

*Pests.*—The Scarlet Runner is subject to similar enemies to the French Bean, but in addition slugs are especially partial to the plant in a young stage, and damage from them may be prevented by lightly dusting the young plants with soot or fine lime or by the use of Sanitas dusted in the vicinity.

## BEET. (*Beta vulgaris*.)

Although sown and used the same year Beet is a biennial, as it only blossoms in the second year. It needs an open situation and a deeply-trenched, good soil. No manure should be nearer the surface than 1ft., otherwise the root becomes forked and useless. Ground on which Celery was grown the previous year is excellent for Beet, as the manure is deep down, and the culture required by the Celery makes the ground very suitable. If, however, the seed must be sown in some other part of the garden the soil should be trenched at least 2ft. deep, working plenty of manure at the bottom of the trench, and leaving the ground as rough as possible for the action of the weather upon it. About the middle of April, if the ground is in good working condition, give a light dressing of soot, and level all down evenly. Next draw drills about 1in. deep and 1ft. apart, and in these sow the seeds very thinly, and cover over by raking the whole bed. When the seedlings are large enough to handle, thin them out to 8in. or 9in. apart in the rows, and then run the Dutch hoe between the rows to remove foot marks. This hoeing may be beneficially followed once

a month, taking care that the Beet is not injured with the hoe. On thin, poor soils, it is almost impossible to grow good roots of the usual type; in such cases the Egyptian or Turnip-rooted should be sown in rows 1ft. apart about the second week in April, and the surface soil kept constantly hoed afterwards to aid the crop and prevent undue evaporation.

*Varieties.*—For general use Cheltenham Green-top cannot be beaten. Other good varieties are Pineapple Short-top and Nutting's Dwarf Red. Of the Egyptian or Turnip-rooted varieties, Crimson Ball and Egyptian Turnip-rooted are both reliable.

*Manures.*—If the soil has been prepared as described very little manure will be required, but if the crop appears to be making poor progress an application of 1oz. of sulphate of ammonia to the square yard will be helpful; or an occasional application of diluted liquid manure may be applied. However, if the crop is doing very well, neither liquid nor chemical manures should be given.

*Storing.*—There is no doubt that the finest flavoured Beet is that taken straight from the ground to be cooked, but as this entails protection by means of straw or similar covering, and as it is untidy in appearance, it can seldom be carried out. In October, before sharp frosts set in, the roots should be carefully taken up, so that no injury results, and the tops twisted off by hand, as any wounds to the flesh cause them to assume a bad colour when cooked. They can then be stored in clamps like potatoes, or packed closely in sand or fine ashes in a cool shed or cellar. They should never be stored in a warm place, as they would at once begin to grow, and thus be spoiled.

*Pests.*—Occasionally the Carrion Beetle (*Silpha opaca*) attacks the Beet crop, the larvæ feeding on the foliage, mostly on the under-side. Spraying with 2oz. carbolic soft soap in 1gall. of warm water is a good remedy; but a capital preventative is to avoid the use of animal manure in the spring and summer. Beet Rust (*Uromyces betæ*) is a fungus that sometimes damages the crop seriously. Usually the first indications are the appearance of black spots on the leaves; at this stage, however, most of the damage has been done, as the spores have spread abroad for another year. Only an expert would be able to detect this enemy in its early stage, and the best plan for the novice is promptly to spray with  $\frac{1}{2}$ oz. sulphide of potassium in 1gall. of water, and when clearing away the crop to burn all foliage. If the plants are sprayed with sulphide of potassium early in June it will act as a preventative.

### Seakale Beet.

This is cultivated in the same way as ordinary Beet, except that the rows are 1½ft. apart, and the plants 1ft. apart in the

rows. The green portion of the leaves is removed, and the mid-rib, or fleshy part is cooked and served in the same manner as Seakale.

### **Spinach Beet.** (*Beta Cicla.*)

This should be sown at the same time as the Beet proper, in rows 18in. apart, and the seedlings thinned out to 18in. apart in the rows. On light soils, where Spinach quickly runs to seed, this will be found an admirable substitute. The green portion of the leaf only should be cooked. No plant pays better for liberal supplies of liquid or chemical manure. In hot weather it will grow luxuriantly if well watered and well fed, and will continue to give a generous quantity of foliage all through summer and autumn, and even in winter. Although a biennial, Spinach Beet is best treated as an annual, sowing a fresh batch every year, and doing away with the old plants.

### **BORECOLE, or KALE.** (*Brassica oleracea acephala.*)

One of the most useful and easiest-grown of all winter and spring vegetables, and adapted to all soils and situations. A good plan is deeply to trench the soil, working in plenty of manure during the previous winter, and sow an early crop of Peas or early Potatoes on the ground, clearing this off when exhausted and hoeing and cleaning the ground preparatory to planting the Borecole. The soil should not first be dug, as the crop will be sturdier, and stand the winter better if the ground is firm. Seeds may be sown any time between the middle of March and the middle of April, in beds, thin sowing being the best, otherwise the seedlings become drawn and leggy in their infancy. As the seedlings become large enough to handle they should be taken up carefully, and planted 2½ft. apart each way, selecting showery weather for the operation. If the strong plants are taken out first, the small and weakly ones in the seed-bed will strengthen, and be ready to plant out a week or two later, and to take the place of an exhausted crop. In dry weather a good soaking of diluted liquid manure will be beneficial, or failing that an application of 1oz. sulphate of ammonia. As the plants begin to grow freely it is advisable to draw the soil to them in the same way as is done with potatoes. This will act as a support and prevent them from getting loosened by wind. In late autumn and winter, when the lower leaves decay, all the dead foliage should be removed, as they encourage dampness and decay, and smell most objectionably.

*Varieties.*—The Tall and the Dwarf Scotch Kales are the varieties most extensively grown. Chou de Russie, or Russian Kale, is a thoroughly hardy variety of exceptionally good flavour; while Cottager's Kale is a strong, vigorous variety, very hardy, and gives a profusion of shoots of excellent quality.

Buda and Asparagus Kales are not to be recommended, as they are subject to attacks of fungus.

**Manures.**—Farmyard manure is the best, but good substitutes are poultry manure, road parings, and fallen leaves mixed together, and dug in in a semi-decomposed state. Sulphate of ammonia or Peruvian Guano at the rate of 1oz. to the square yard, given while the plants are in active growth, is beneficial, but care must be taken that these chemical manures do not fall on the foliage.

**Pests.**—The most serious pest is *Pseudomonas campestris*, a disease that attacks the Buda and Asparagus Kales especially, and frequently totally destroys the whole crop. It is characterised by a black spotting of the stems, which eventually rot away. If this bacillus should make its appearance burn at once all affected plants, and do not plant any of the *Brassica* family on the same ground for a few years. Wireworms are sometimes troublesome, but frequent stirring of the soil will soon eradicate this pest.

### **BROCCOLI.** (*Brassica oleracea botrytis asparagoides*.)

Almost any soil that is well drained will suit this crop, providing the ground has been trenched 1½ ft. to 2 ft. deep and a liberal application of manure incorporated. Broccoli, however, should not follow a similar crop, but a pulse like Peas or Beans, or a root like Carrots. Again, it is a capital vegetable for following early crops that are exhausted by the end of July; but for autumn cutting the plants should be put in by the middle of June. A firm and rather compact soil gives the best results, and for those which are on very light and recently dug land it may be necessary to well tread the ground before planting. For the earliest supplies seed may be sown thinly in beds in a sheltered position at the end of March, and successional sowings be made once a fortnight till the end of May, putting out the plants when large enough, and not permitting them to get "drawn" in the seed-bed. If time will allow, it is a good plan to transplant the seedlings when quite small into a nursery-bed, giving a sprinkling of soot to protect them from slugs. As soon as big enough they should be at once transferred to their permanent quarters, taking them up with a good ball of soil and planting them with a trowel. They will then grow without a check. If the soil is at all on the dry side, a thorough watering immediately after planting is advisable, and if slugs abound a sprinkling of soot is advisable afterwards. Frequent hoeing and an occasional thorough soaking of water if the weather is dry is all the attention they need until severe frosts set in.

**Varieties.**—The following varieties are given in their order of coming into use :—Walcheren, one of the earliest, ready in Sep-

tember if seed be sown at the end of March. Veitch's Self-Protecting, an excellent variety, ready in October and early in November; seed should be sown about the middle of April. Snow's Winter White, a most valuable midwinter variety (when true), being partially self-protecting and hardy. Eclipse, a capital hardy variety, coming into use after Snow's Winter White, both of which should be sown about the end of April. Late Queen, one of the best late varieties, coming into use from March onwards; should be sown the first week in May. Carter's Summer, a fine, hardy, late variety, coming into use in May and June; should be sown the first or second week in May.

*Protection.*—As no variety of Broccoli is able to withstand severe frosts, it is imperative that protection in some form should be provided if a constant supply is to be kept up. In frosts of about 10 degrees it will be sufficient to tie up the leaves over the heads; this will not only protect them, but by keeping off the wet and sun they will be whiter and of finer quality and flavour. If severe frost is expected it is a good plan to take up those that have already commenced to form heads, with as much soil and roots as possible, and pack them closely in a shed or a frame. The old plan of laying the plants on their side on the approach of bad weather is less trouble than the above, but far from being as efficacious.

*Manures.*—The manures recommended for Borecole will suit this crop equally well.

*Pests.*—*Pseudomonas compestris* will occasionally attack Broccoli, but seldom to any serious extent. One of the worst enemies is "Clubbing," and this will frequently ruin half or more of the crop. After trying many suggested remedies, we have come to the conclusion that lime fresh from the kiln spread over the land, and the lumps dug in, is the most efficacious. It may be put on at the rate of a barrow-load to the rod, and in about a fortnight after digging in the lime in the lumps, the ground should be forked over again. The lime will then be in fine powder, and can be thoroughly mixed with the soil. This liming can be done at any time when the ground is vacant, and if desired the Broccoli may be planted a month later; or any other crop may be put in, and Broccoli be allowed to follow it. If this is done as advised "Clubbing" will not be much trouble afterwards, but heavy manuring will be necessary after the Broccoli crop is cleared off.

### **Sprouting Broccoli.**

Nothing has been said about this for the reason that it is nothing like so good as the ordinary Broccoli, and is scarcely needed if both Broccoli and Borecole are grown.

## BRUSSELS SPROUTS. (*Brassica oleracea bullata gemmifera*.)

One of the finest of all vegetables, but it should be remembered that it is one requiring a long season of growth to get heavy crops. For that reason seed should be sown in a frame in February for early crops, and at the end of March for mid-season or late crops, taking care that the plants are stout and sturdy, as leggy specimens from the seed or nursery bed never produce such satisfactory crops or such good sprouts as those that have been sturdy from first. Practically any good soil will grow this winter vegetable, provided it has been deeply dug and well manured. If the soil can be trenched 3ft. deep all the better, as the plant will send its roots a great depth if it can find food. If very large specimens yielding great sprouts are wanted, the plants will be best put out 3ft. apart each way, but for ordinary purposes 2ft. apart each way will be ample. They should be watered freely in dry weather, and the surface soil kept constantly moved with the Dutch hoe until they are a good size, then earthed up. This tends to keep them steady and to prevent wind-waving. When the lower leaves turn yellow they should be removed. This will strengthen the sprouts, and be generally better for the plants, while it will obviate any disagreeable smell arising from rotting foliage.

*Varieties.*—The following will be found the most serviceable:—Carter's Exhibition, Aigburth, Fresh Imported (the smallest and most compact variety in cultivation), Sutton's Exhibition, and Rosebery. The last two are excellent for show purposes.

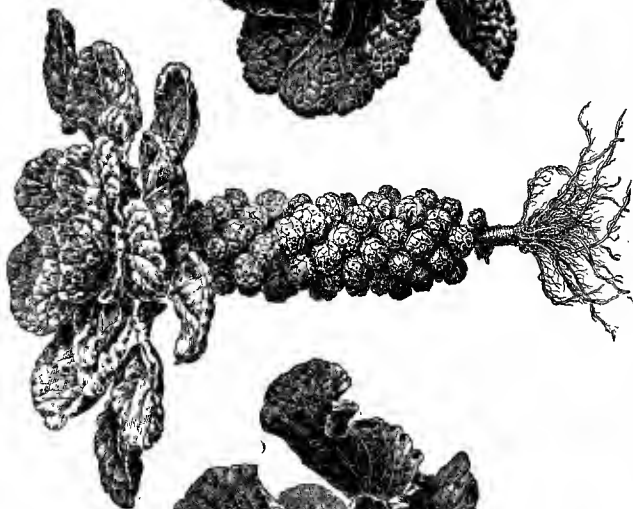
*Gathering.*—Although only a small matter, it is always best to commence picking the sprouts from the base first, leaving those at or nearest the crown till the last, as the lower sprouts always are the first to open or burst. The crown of the plants should never be removed till all the sprouts are picked. If taken off before the sprouts are all picked it causes all the buttons or sprouts to open or burst, and renders them useless.

*Manures.*—The same as advised for Borecole and Broccoli.

*Pests.*—Clubbing is one of the worst enemies to contend with, and a change on to soil that has been well limed and not had any of the *Brassica* family on for some time is one of the simplest preventatives. (See *Broccoli*.) Wireworm is sometimes a trouble; for this a frequent turning or moving of the soil is a sure cure if persisted in. In fact, thorough cultivation and constantly stirring the surface soil are the best of all preventatives against pests and diseases.



SAVOY CABBAGE.



BRUSSELS SPROUTS.



CAULIFLOWER.





**CABBAGE.** (*Brassica oleracea capitata*.)

There are two distinct types of Cabbage—the smooth-leaved, and the curled, or Savoy. For the former, a deep, rich soil is best, but not a necessity, as excellent Cabbages are grown on soil that is neither naturally good nor very deep. Almost any soil that is not water-logged, that has been well dug, and liberally manured, can be made to grow good Cabbage all the year round. For early spring use the seeds should be sown thinly in August in the open ground. In that case the plants may be taken straight from the seed-bed and placed in their permanent positions, taking care that they do not follow Cauliflower or similar crops. The sooner the young plants are ready to put out the better they will stand the winter. For late summer and autumn consumption seed should be sown early in March on a warm border and protected from birds. As the largest seedlings become fit to put out they should be carefully drawn from the seed-bed and planted. The smaller ones left will grow on and be ready for planting out a fortnight later, and there will even then be some small ones left for a further succession. Red Cabbage should be sown in August, and treated similarly to ordinary Cabbage, except that it is usually grown to full size before being cut. Frequent hoeing or moving of the surface soil is highly beneficial, as it tends to promote vigorous growth and quick development, while at the same time it keeps down weeds and checks injurious insect attacks.

*Varieties.*—Harbinger is one of the best varieties for autumn sowing; it is a compact grower, with heads of medium size that turn into use very quickly, frequently being ready to cut in February. It may be planted 1ft. apart. Ellam's Early, a well-known variety for autumn sowing, standing well in cold districts, and very reliable everywhere. It should be planted 18in. apart each way. Carter's Mammoth Beefheart is a large, handsome Cabbage of fine quality that comes into use in May and June; it is not subject to running to seed, and may be planted 18in. apart. Express is a capital variety for spring sowing, forming medium-sized whitish heads of superior quality, very handsome; may be planted 15in. apart. Nonpareil, a first-rate variety for either spring or autumn sowing; very compact, and good quality. Blood Red is still one of the best varieties for pickling. It may be planted 2ft. apart.

*Manures.*—Farmyard manure, aided by a chemical manure later on in the season, is excellent for this crop. When the plants are beginning to form heads in the early spring, an application of 2oz. nitrate of soda, or 2oz. sulphate of ammonia to the square yard is a great help, especially if lightly hoed in at once. In the summer and autumn a similar dressing will

do good, and another first-rate application is 2oz. of guano to the square yard. If the soil is infested with slugs or wireworm, an application of 3oz. superphosphate and 2oz. kainit to the square yard just before planting will act as a deterrent to these pests, and prove a good and reliable manure.

**Pests.**—One of the worst pests is the larva of the well-known Large White Butterfly (*Pieris brassicæ*). Where very troublesome, quick-lime or soot worked into the soil in April and July will do a great deal toward reducing the pest. Hand-picking the caterpillars is also beneficial though tedious.

Another pest is the Cabbage Moth caterpillar (*Mamestra brassicæ*), which eats into the hearts, and must be hand-picked. Wireworm and cockchafer grubs, Finger and Toe, or Clubbing, are all pests to which the Cabbage is subject, and a dressing of quicklime, a barrow load to the rod, is one of the best remedies for all these enemies, digging in the lime while it is fresh, and forking the ground over again shortly afterwards.

### **Savoy.** (*Brassica oleracea bullata*.)

The soil and culture suggested for the ordinary Cabbage are equally adapted for the Savoy. For early crops seeds should be sown about the middle of March, but for ordinary use the middle to the end of April is quite early enough, and even to the middle of May seeds may be sown for late supplies. It should be remembered that the quality of the Savoy is improved by frost, and if sown too early the heads burst before frost comes, unless cut before.

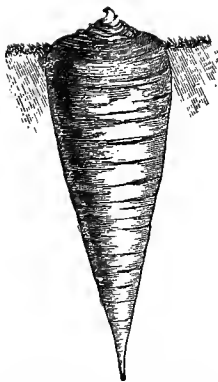
**Varieties.**—Ulm or Early Green Curled is a delicious little Savoy coming quickly to maturity. May be planted 15in. apart. Dwarf Green Curled, a medium to large variety of very good quality, standing severe weather admirably; it may be planted 18in. apart. Large Drumhead, a very large variety, perfectly hardy, handsome, of good quality, and one of the finest late varieties.

### **CARDOON.** (*Cynara Cardunculus*.)

This near relative of the Globe Artichoke is not of sufficient value as a vegetable to merit consideration.

### **CARROTS.** (*Daucus Carota*.)

Although the Carrot is usually little trouble to cultivate, there are some soils in which they absolutely refuse to grow, and where this is the case, we advise forking in fine powdered chalk at the rate of one ton to the acre just before sowing. On the majority of soils, however, the ground should be deeply dug in the autumn, putting any manure at least 1ft. from the surface, and leaving the ground as rough and uneven as possible, so that frost and the weather generally may pulverise the soil



JAMES' INTERMEDIATE CARROT.



FRENCH SHORTHORN CARROT.



CELERIAC.



and make it in first-rate condition for seed-sowing the following February or March. If manure is placed or dug in near the surface the roots are certain to become forked and useless for domestic use. For the earliest outdoor crop seed should be sown early in February on a warm sheltered border, taking care that the soil is in a nice dry friable state. As this crop is essentially for early use, the seed will be best sown thinly, broadcast, and not in drills, afterwards covering lightly with sifted old potting-soil. The next, or main crop, ought to be sown at the end of February or early in March, selecting a day when there is no wind, as the seeds being so light are easily blown away. Again, the soil must be in a nice dry condition, and not at all sticky. Before sowing, a dressing of soot or burnt garden refuse raked into the soil will improve it considerably and assist in keeping down the many enemies that attack this crop. Drills should be drawn 1ft. apart, and about  $\frac{1}{2}$ in. deep, and in these the seed should be sown thinly and evenly. Immediately the rows are clearly defined, the Dutch hoe should be run between them. This will keep down weeds and encourage the growth of the seedlings. Later on, when they are large enough, they should be thinned out to about 6in. apart in the rows, afterwards drawing out every alternate one as required for use, leaving the crop to mature at 1ft. apart. As young Carrots are always in demand, a sowing may be made once a month for drawing while quite young, but it is seldom much use sowing after the middle of August.

*Storing.*—The best flavoured roots are those just lifted from the open ground, and for that reason some gardeners put a mulch of litter or bracken over their crop in frosty weather, taking it off when this is past. Still it is not wise to depend on this mode of keeping Carrots. A portion might be left in the ground, but the greater part of the crop should be carefully lifted, the tops cut off, and the roots stored in sand or fine ashes in a frost-proof shed or cellar, or be clamped like Potatoes.

*Forcing.*—To get early, tender Carrots hotbeds should be made early in January, consisting of strawy manure trodden very firm, and wider and longer than the frame. Immediately the hotbed is made—say, about 4ft. deep—put on the frame and cover the bed inside the frame with fine soil about 6in. deep. In about two days heat will generate, and the seed may be sown thinly over the whole bed, very lightly covering it with fine soil. No watering should be done, as sufficient moisture will ascend from the hotbed for germination. If the bed was thoroughly trodden the heat will not be too intense, but if it is strong, then ventilate the frame by tilting the frame-light at the top. As the seeds come up air in moderation should be admitted to the frame, and if there are signs of frost or snow

cover up with mats, but do not keep on this covering any longer than is absolutely necessary.

*Varieties.*—Early Scarlet Horn is the best for frame or early border sowing, and is of fine flavour. Scarlet Intermediate is specially suited for thin or shallow soils; the quality is excellent, and the root is intermediate in length between the Long and Short Horn section. Selected Altrincham is the best variety for all deep or moderately deep soils; it is long, handsome, and of fine colour.

*Pests.*—One of the worst pests is the larva of the Carrot Fly (*Psila rosæ*) which “holes” the roots, rendering them useless for market or home use. Another pest is Rust, which generally attacks young plants. Slugs, wireworm, and similar foes abound in some gardens, and amongst the many remedies that we have tried for all the above, nothing has equalled powdered chalk, and next to that quicklime forked in before sowing. Soot is also very useful, and on light soils a dressing of agricultural salt at the rate of 5cwt. per acre, or 4oz. to the square yard, put on before sowing is excellent, as it is destructive to slugs and other pests, is a good fertiliser, and helps to retain moisture in the soil in dry weather. Frequent hoeing between the rows is also beneficial in eradicating or keeping down pests.

*Manure.*—If the ground has been well dug or trenched in the autumn, little if any other manure is either needed or advisable, because any manures, liquid or solid, put on the crop while growing will cause “forking,” and be liable to spoil the crop.

### CAULIFLOWER. (*Brassica oleracea botrytis cauliflora*.)

To maintain a continuous supply of this very important crop a great deal of care and forethought is necessary, especially during hot weather. As is the case with this family generally, the plants are gross feeders and want a rich, well drained soil. Very fair Cauliflowers can be grown on thin, poor soils, but it means heavy applications of manure before planting and frequent watering with diluted liquid manure in dry weather. To procure very early heads seeds should be sown in boxes, or in hotbeds early in January, and the seedlings when large enough pricked out into other boxes or hotbeds, or potted singly into small pots. These plants should be gradually hardened off, and planted out on warm borders, protected by cloches, fir branches, or other material, until the weather is more genial. Later sowings should be made in gentle heat in February, and about the middle of March the late varieties should be sown in the open, putting out each sowing directly the plants are big enough, and giving a good watering if the weather is dry. As the plants become established use the Dutch hoe freely

amongst them, and in dry weather water copiously with diluted liquid manure, as the quicker the Cauliflower is grown the finer the flavour. When the heads are forming the leaves may be bent over or tied up; this will ensure the heads being of fine colour, and very tender. July is often the worst month for Cauliflowers, and a break often occurs in the supply. This may be got over by sowing Autumn Giant in frames in August, pricking out the seedlings when large enough into other frames, and keeping the plants as sturdy as possible by giving plenty of ventilation on all favourable occasions. In the spring these plants should be put out where they are to grow, and if given a good start they will produce magnificent heads in July and August. When the heads have been cut, the plants ought to be pulled up, as they impoverish the soil and are lurking places for injurious insects, etc.

*Varieties.*—Carter's Forerunner, excellent for early sowing, producing splendid heads of beautiful colour; habit very compact. May be planted 15in. apart. Early London, an old variety, but still one of the best for early summer use if procured true to name. May be planted 18in. apart. Autumn Giant, one of the best late summer and autumn Cauliflowers grown, and it stands drought well. If generously treated the heads attain a great size, but they are of the finest quality if not permitted to grow too big. May be planted 2ft. apart.

*Manures.*—In addition to plenty of natural manure worked in the soil before planting, and liquid manure while growing, 2oz. nitrate of soda or 2oz. sulphate of ammonia to the square yard given while the plants are growing is an excellent stimulant.

*Pests.*—See *Borecole* and *Cabbage*.

## CELERIAC. (*Apium graveolens rapaceum*.)

A Turnip-rooted Celery and a most delicious vegetable, or salading, and one capital for flavouring purposes. The sowing and early management are similar to those for ordinary Celery, but it does not require trenches. It is best grown on flat quarters that have been generously manured. The plants may be put out 15in. apart, and if kept hoed, free from weeds, and well watered in dry weather, they will make excellent bulbs for early winter use; it is difficult to keep them after the end of the year.

## CELERY. (*Apium graveolens*.)

A cross between a Broccolo and a Cabbage, but not now better for attention. A deep soil, and plenty of manure are essential, and it is a good plan to prepare the trenches a month or two before planting if possible. The usual and best

plan is to make trenches 18in. deep, and the same in width, and about 5ft. apart, breaking up the bottom afterwards, giving more rooting space, and allowing any surplus water to pass away. Just before planting, 6in. of well decayed manure should be put in the bottom of the trench, and on this 3in. of fine, rich soil. In each trench a double row of plants should be inserted 1ft. apart, giving a good watering immediately after. The after management consists in keeping down weeds, and giving copious supplies of water or diluted liquid manure during dry weather. A mistake is often made in beginning to earth up the plants too soon. They will make much finer plants and better, heavier heads if not earthed up till nearly three parts grown. Again, while not earthed up they can be fed easily, the roots getting full benefit from such applications, which is impossible with plants earthed up. As a rule, two earthings up are sufficient for early, mid-season, or late Celery. In about five weeks after the final earthing up the heads will be sufficiently blanched for use.

For very early crops seeds should be sown in shallow boxes or pans of rich soil in heat early in January, and when the seed has germinated it should be placed close to the glass, where it can receive all the light possible. As the seedlings advance prick them out 4in. apart in other and rather deeper boxes than those employed for the seed, using a rich compost. After gradually hardening off, transfer the plants to the prepared trenches and protect by mats or fir branches on cold nights. For midseason or late Celery sow seeds as advised above, but instead of pricking the seedlings out in boxes, put them out in frames about 4in. apart in good rich soil, transplanting them before they become too large or drawn. In fact, from the time the seed is sown till finally earthed no checks to the growth should be allowed, otherwise the plants may bolt and be rendered useless. Frequent causes of "bolting" are—insufficient water, exhausted root run in infancy, and too late planting from the beds or boxes.

In very severe weather it is always advisable to cover the ridges of Celery with a thick layer of straw or litter; this will prevent the hard frost from injuring the plants, and enable one to dig the Celery by keeping the soil from freezing too hard.

*Varieties.*—Solid Ivory is one of the best for earliest use. Sandringham Dwarf White, excellent for early sowing, and of good flavour. Standard Bearer, probably the finest red variety grown for midseason or late crops, as it is a capital keeper. Other good red varieties are Leicester Red, Clayworth Prize Pink, and Wright's Grove Red.

*Pests.*—Of late the fungus *Septoria petroselini apii* has been very destructive. It appears on the plants at different stages, but generally when they are a quarter grown; sometimes



earlier, and sometimes later. At first small brown spots are noticed on the foliage, these quickly spread over the whole plant, stopping growth and rotting it away. The pest is introduced with the seed, and strange to say, germination is usually excellent and no trace of the enemy is found until the plants get a fair size. At present there is no known remedy, but as the plants will never be any good it is best to root them all out and burn them, then to lime the soil, and next year to put the crop in a fresh place. It would also be advisable to get a guarantee from the seedsman that the seed purchased is from healthy plants. Another pest also causing spotting of the leaves and rotting of the plants afterwards is *Phyllosticta brassicae*, and in severe attacks the plants should be pulled up and burnt. The Celery Fly (*Tephritis onopordinis*) does a good deal of harm in some places. The best remedy is to syringe the plants over with 2oz. carbolic soft soap dissolved in one gallon of water, or to use paraffin emulsion at the strength recommended by the vendors. It is also important to destroy all docks that may be growing in the banks or hedgerows near, as these encourage this pest.

**Manures.**—Almost any soluble chemical manure is a valuable aid to the farmyard manure, bearing in mind that weak and often is better than occasional strong applications. A good grade of guano at the rate of 2oz. to the yard run of trench is excellent, as is also 2oz. of sulphate of ammonia to the yard run, taking care that neither of the above falls on the foliage. Soot, again, in small quantities is beneficial in many ways.

### **CHERVIL.** (*Anthriscus cerefolium*).

A useful vegetable for salads and flavouring purposes, as the foliage is ready for use in about six weeks from the time the seed is sown; it may be sown nearly every month in the spring, summer, and autumn, in any fairly good soil in an open situation. Only a very small quantity of seed should be sown at once, as a few plants will provide a quantity of leaves for picking. There are only two varieties—the Plain-leaved and the Curled. The pretty leaves of the latter are also useful for garnishing.

### **Chervil, Turnip-rooted.** (*Chærophyllum bulbosum*.)

A little-known vegetable whose roots resemble those of a Short Horn Carrot, but of a dark colour, with whitish flesh of a very pleasing flavour when boiled. It is most important that the seed is sown soon after it is ripe, otherwise the germination is bad. The soil should be fairly deep and well drained, with no manure near the surface. At the end of August or early in September, sow the seeds in shallow drills 18in. apart, then rake over evenly and keep free from weeds.

Germination will not take place till the spring. When large enough, thin out the seedlings to about 6in. apart. Beyond weeding and watering, no further attention is necessary. Early in August the tops will die down, and the roots may be lifted from the ground all through the autumn and winter as required; if stored, they deteriorate in quality.

### CHICORY. (*Cichorium Intybus*.)

One of the easiest of plants to grow for salads, and one of the most reliable for winter use. Seeds should be sown in June in drills about 18in. apart in a sunny position and where the soil is fairly deep. Germination is quick, and as the seedlings advance they should be thinned out to 6in. apart in the rows, afterwards keeping the Dutch hoe going between the rows when the weather is dry. As the winter approaches, a batch of plants may be lifted and put in a warm cellar, mushroom-house, or other place where the light can be excluded. The roots may be placed thickly in large pots, deep boxes, or even in soil on the floor, giving a thorough watering afterwards. In a very short time they will throw up quantities of tender and beautifully blanched heads which will be highly esteemed in the salad-bowl. Successional batches may be put in as required, and a continual supply kept up all through the winter.

*Varieties*.—Common Chicory, Broad-leaved, and Large Brussels, better known as Witloof. For general use there is little to choose between any of the above. This is also known as Barbe de Capucin.

### CHIVES. (*Allium Schænoprasum*.)

A member of the Onion family often used in substitution therefor in salads. It is best grown as an edging to kitchen garden paths, and increased by division in March; or if the edging becomes too wide the plants may be taken up, divided, and replanted in the same place. If the leaves are cut several times during the summer, not only is the appearance of the plant improved, but the new growth is all the more acceptable for mixed salads. Any soil with the addition of a little manure suits this plant.

### CHOU DE BURGHLEY.

A cross between a Broccolo and a Cabbage, but not now grown to any extent.

### CORN-SALAD. (*Valerianella olitoria*.)

A salad plant sometimes met with. Almost any soil with a little manure will grow this crop. Seed should be sown broad-

cast in September in a sunny position. In a very short time germination takes place, and the little foliage is ready to pick for salad.

**CRESS.** (*Lepidium sativum.*)

One of our best-known salad plants. Anyone possessing a warm frame or pit can have an abundant supply all through the winter by sowing seed thickly in boxes of fine soil once a week, or oftener if large quantities are required. We prefer to sow the seed on a perfectly level surface, and not to cover it with soil. Germination is equally good, and when cut there is no soil or grit mixed with the Cress. In the open, select a shaded situation and sow the seed on fine soil, but not covering it, merely giving a watering at once. Plain or Common Cress is the most useful variety. American Land Cress should be oftener grown as a salad; it is of pleasant flavour, very productive, and not particular as to soil. Sow in May in drills 1ft. apart, and thin out the plants to 4in. apart in the rows.

**CUCUMBER.** (*Cucumis sativus.*)

One of the most popular of all garden vegetables. The heaviest crops and finest fruits are those grown on plants trained on trellises near the glass of houses or pits, although fruits of excellent quality are grown in frames on hot-beds, or heated by hot-water pipes. Taking the culture in houses or frames first, seed should be sown early in January in small pots, one seed to a pot, and the pots then plunged up to their rims in a hot-bed made of leaves or litter, with a bottom heat of 75deg. to 80deg. Fahr., and a top temperature of 65deg. to 70deg. Fahr. In a few days the seeds will germinate, when the pots should be lifted half out of the plunging material, so as to avoid too sudden a check, as would be the case if they were entirely removed at once. About this time mounds of soil, about a bushel to each mound, should be made, consisting of two parts good fibrous loam and one part of leaf-soil or well decayed manure. In a week these mounds will be thoroughly warmed and ready for the reception of a plant to each. After planting, a stake that will reach to the trellis should be put to each plant, tying the plant loosely to it. Tepid water should be used to settle the soil about the roots. The plants will enjoy plenty of heat and moisture, and if the temperature runs up to 80deg. or 90deg. Fahr. with a saturated atmosphere they will grow rapidly. Ventilation is an important matter, and cold draughts will encourage mildew and other evils, and for that reason it is better to err on the side of too little than too much air in the early months of the year, always provided there is plenty of moisture in the internal atmosphere. Sun heat, or great fire heat without adequate

moisture are sure to induce Red Spider, Aphides, Thrips, and other pests. As the little white roots appear through the mounds of soil, it is an excellent plan to give a very light top-dressing of half fibrous loam and half decayed manure—about 1 in. thick is quite enough—continuing this through the whole season; this will keep the roots active, and maintain the health and vigour of the plants.

The training of the plants consists in running the stem up to the trellis, removing any side shoots that may appear, and after the plant has reached the trellis, allowing the side shoots to grow, pinching out their points one leaf beyond the fruit, and afterwards going over them every week to cut out exhausted or weakly shoots, and to train vigorous ones in their place. If this is done every week, there will not be any excessive removal of wood or foliage at once, which ought to be always avoided.

In frames it is seldom advisable to make up hot-beds before March; these should be at least 4 ft. deep and 1½ ft. to 2 ft. wider than the frames to cover the bed, and the bed be made very firm. When the frame is in position, cover the manure with about 6 in. of similar compost to that advised for houses or pits, and sow two or three seeds in the centre of each light, but leaving only one plant eventually. If the heat becomes strong lift the light at the top by inserting a small stone or piece of wood between it and the frame. This will allow of the escape of any surplus heat or moisture. The method of ventilating already recommended should be adopted for frames, shutting them up early in the afternoon with a good sun heat and ample atmospheric moisture. Under such conditions insect pests cannot exist.

Ridge and Gherkin Cucumbers are grown in the open, and in our uncertain climate it is a good plan to sow the seeds singly in pots in frames—the end of April is early enough—growing them on steadily till the end of May or beginning of June, and then planting them out in rich soil in a fully exposed position, yet sheltered from cold winds. If cloches or hand-lights are available, they will be of great assistance in hastening cropping if put over the plants from the first. Failing these, fir or other branches should be used to protect the newly planted Cucumbers until the weather is settled.

*Varieties.*—Telegraph is still one of the most prolific, free-bearing, handsome, vigorous, and most reliable varieties, equally adapted for house or frame culture. Carter's Ideal is a new variety of great merit, possessing the good qualities of Telegraph, with a shorter neck. Lockie's Perfection is another handsome prolific variety with very short neck. The common Gherkin, Stockwood Ridge, and Best of All Ridge are capital for outside culture.

**Pests.**—Of the many foes of the Cucumber Eelworms are among the worst. They are so small as to be invisible to the naked eye. Some of the surest indications of its presence are “cankorous” or warty growths on the roots, and curling up of the foliage. As there is no cure for badly infested plants, it is wise to adopt preventive measures, and this means sterilising the soil by baking or scalding before bringing it into the house or frames. Of the other pests, the commonest are Red Spider, Thrips, and Aphides. All these can be eradicated by fumigation, vaporising insecticides being the most deadly to insect life, and safest to use. Mildew is occasionally very injurious, and is induced by too much or too little water at the roots, and checks such as faulty ventilation. Sulphide of potassium at the rate of  $\frac{1}{2}$  oz. to 1 gal. water, lightly sprayed over the foliage is a good remedy, but any falling on the painted wood work discolours it; where this is an objection, it is a good plan to cover the hot-water pipes with fine sulphur mixed with skim milk to the consistency of paste, keeping the house dry for a couple of days, and the pipes very hot at night, with the ventilators closed. The fumes from the sulphur will usually kill the mildew. Another method is to dust sulphur all over the foliage, also keeping the house dry for a few days.

**Manures.**—In addition to the manure mixed with the soil in making the mound or topdressing, diluted liquid manure from cattle, sheep, or poultry is excellent, but as a change of food is exceedingly beneficial, an application of Peruvian Guano at the rate of 10z. to the square yard, about once a fortnight, is advisable. Nitrate of soda or sulphate of ammonia at the same rate as guano may be used if the plants show a lack of vigour.

## DANDELION. (*Leontodon Taraxacum*.)

A useful salad plant cultivated in this country and blanched. It may be used either alone, or better still, mixed with other saladings. By putting successional batches of plants into a cellar or a forcing-pit a supply can be had all through the winter. Any fairly good soil will grow the plant well, and the middle of April will be quite early enough to sow the seed in shallow drills of about 15 in. When the seedlings are large enough to handle, they ought to be thinned out to 6 in. apart in the rows. Frequent hoeings afterwards will benefit the plants, and an occasional soaking of diluted liquid manure will encourage strong growth, which will mean fine heads later on when forced. It may be thought that growing Dandelions thus as a cultivated plant in the garden may be a nuisance but they very rarely produce flowers, so that the chance of a crop of weeds is remote.

*Varieties.*—There are several varieties, but we have found none to equal the Thick-leaved for either productiveness or flavour.

### **EGG-PLANT, or AUBERGINE.** (*Solanum Melongena*.)

Formerly these plants were grown for ornament only, but now they are frequently seen during the season on sale in Covent Garden Market, showing there is a demand for the fruit, and in private gardens they are more frequently seen than in the past.

The Egg-Plant, or Aubergine, makes a very telling addition in a collection of exhibition vegetables; while it is quite a delicacy on the table. It is perhaps because it ought to be grown under glass that it is not more extensively cultivated now. To secure heavy crops of large fruit, the seed should be sown early in February, potting the seedlings separately in small pots when large enough, and keeping them near the glass in a light position. When the pots are full of roots, repot into a larger size, still keeping the plants in a light situation. This repotting into larger sizes must be continued until eventually the plants are in pots 8in. or 9in. in diameter. A good compost consists of three parts fibrous loam, one part well-rotted leaf-mould, and a sufficient sand to keep the whole porous. Plenty of drainage should be provided. When the first fruits are set, weak liquid manure may be given frequently with advantage, and if Aphis or Red Spider attacks the plants, fumigation should be resorted to. In mild parts of the kingdom the plants may be turned out of the pots about the middle of June, and planted in rich soil about 2ft. apart each way, selecting a warm, sheltered position. In the evenings of hot days thoroughly syringe the plants with clear water and give weak liquid manure whenever the weather is dry. This will keep down Red Spider and Aphis and maintain a clean, healthy, vigorous habit, and an abundant crop of fine large fruit will follow.

Varieties are not numerous, and are usually sold under the names of Purple, Scarlet, and White.

### **ENDIVE.** (*Cichorium Endivia*.)

An indispensable salad-plant. It should be grown quickly on rich soil in a perfectly open situation, and not shaded by trees or tall-growing crops. If not rich in plant-food from a previous crop, the soil should be dug one spit deep, and plenty of well-rotted manure incorporated, and if the soil is heavy and tenacious, road scrapings, burnt garden refuse, or old potting soil will assist to keep it open and suitable for good root action. On light land it is a good plan to tread the soil well before sowing. It is then more likely to retain moisture than if left loose. Where slugs and other pests abound a dressing of soot

raked in will be beneficial. When the ground is ready, and the soil in a good working condition, very shallow drills, about 18in. apart, should be made, and the seed sown thinly. The time to sow varies according to the locality: in the north and in cold districts the first sowing may be made the third week in July, but in warmer places the first week in August will be quite soon enough; if sown too early most of the plants will run to seed and be useless. When the seedlings are large enough, they should be thinned out to 1ft. apart in the rows, and the thinnings at once transplanted into rows about 18in. apart and 1ft. apart in the rows, giving a thorough watering immediately after planting if the weather is dry. A successional sowing may be made a fortnight or so after the first one. This will give the latest supply. As the plants become established, frequent stirring of the soil will encourage growth by preventing undue evaporation, and make it easier for the copious waterings so necessary in dry seasons.

This plant is of little value if not blanched for use. In large gardens there are usually mushroom-houses, warm sheds, or warm cellars in which the plants can be taken up carefully with as much soil attached to the roots as possible, and packed somewhat thickly in boxes or beds, watering the same to settle the soil about the roots, and to prevent withering of the foliage. In about a fortnight cutting may commence. Melon or cucumber houses are excellent structures for Endive, as these crops having been cleared away this salad plant can take their place in the beds, excluding the light by means of mats or similar material. In less pretentious gardens frames covered with mats answer the purpose very well, although blanching takes a little longer than when in a warmer structure. Inverting large pots over the plants as they stand on the ground is very successful, the drainage-hole in the pot being covered with a stone. Tying up the leaves into a bunch is a success on light, well-drained soils, but one of the simplest methods is to cover the plants in the ground with about 6in. of bracken or straw litter. We find that it blanches the leaves admirably, and they are very tender and good in flavour. In very cold districts the plants should be lifted and put in cold frames for late supplies, as severe cold injures them, and rot sets in, quickly destroying the plants. Too much water will have the same effect.

*Varieties.*—The following are good: Improved Broad-leaved Batavian, and Winter Giant Green-curved (the best of the curled type).

*Manures.*—Liquid manure in a weak state is rapid in its action and very suitable.

*Pests.*—Slugs are frequently troublesome; when this is the case, soot is the best remedy to apply.

**FENNEL.** (*Fœniculum vulgare.*)

A strong-smelling herb grown for flavouring sauce and occasionally cooked. The plant is so easy to grow, and adapted to all soils, that it may be cultivated either in the herb bed or in any out-of-the-way corner. The seed may be sown at almost any time except mid-winter, though early April is best. Although as stated this plant will grow anywhere, the best results follow good cultivation. After digging the soil one spit deep, and turning in manure at the same time, the surface should be broken up fine, and the seeds sown thinly, either broadcast or in drills, whichever is preferred, covering afterwards very lightly with fine soil. Later on thin out the seedlings 1ft. apart. As a rule, a bed of Fennel will continue in use for years if not allowed to flower and seed. And by cutting off the flower-stalks a greater and fresher supply of tender foliage is produced for use. Diluted liquid manure is the best stimulant to use.

**GARLIC.** (*Allium sativum.*)

A most useful vegetable, though not so much grown in this country as on the Continent. From the middle of February to the middle of March the divided portions of the bulbs may be planted in rows 1ft. apart, and three-parts buried in the soil. Any fairly good soil is suitable for this crop. Later on keep down weeds and Dutch hoe between the rows, and if extra large bulbs are required give diluted liquid manure in summer. In autumn, when the leaves have all died down, the bulbs should be lifted, dried, and stored in a dry frost-proof shed.

**GOOD KING HENRY.** (*Chenopodium Bonus-Henricus.*)

In some parts of this country this vegetable is scarcely known, while in others—some of the Eastern Counties especially—it is much esteemed and largely grown. As it is a perennial, the soil should be trenched 18in. deep and well manured before planting, and the position ought to be open and well exposed to sun and light. The seed may be sown very thinly in shallow drills in April, and the plants thinned out to 18in. apart in the rows. If the thinnings are pulled in showery weather they can be transplanted into other rows at the distances apart already named. Another plan is to sow a small bed broadcast, taking up the plants when large enough and transplanting permanently at the distance named above. In dry weather a thorough soaking with liquid manure will be a great aid in promoting strong growth. A mulch of rotten manure early in spring is also beneficial.



**GOURDS AND PUMPKINS.** (*Cucurbita vars.*)

Many of the Gourds and Pumpkins are excellent vegetables, and as edible as Vegetable Marrows if cooked quite young. They are of pleasant flavour, while later on, when large, they are equally useful for cooking and also for making a delicious marmalade. Many varieties, of course, are only suitable for ornament. These we shall not touch upon. Amongst the essential things the Gourd requires are a great root-run, rich soil, plenty of moisture while growing, and a favourable summer, as the plants revel in heat. Seed should be sown in frames, one seed to a pot, at the end of March or early in April, using a compost of half loam and half decayed leaf-mould. The frame should be kept rather close for a week or so till the seeds have germinated, when air should be gradually admitted on all occasions that the weather is warm and genial. As the pots are filled with roots, the plants should be re-potted into larger ones, using a compost of half loam and half decayed manure. The plants should be kept free from insect pests by syringing them morning and evening, and if by chance Aphis attacks the foliage, fumigation should be promptly adopted. By the end of May the plants will be of a good size and ready for putting out in the open. Heaps of old soil, or heaps of garden refuse, are capital for these plants, as the roots can roam at will, but full exposure is necessary. If there are no such heaps of refuse, the soil should be trenched at least 2ft. deep, putting in as much manure as can be conveniently buried, and on this the plants should be arranged 10ft. or 12ft. apart each way. If the climatic conditions are bad after planting, protect with cloches or fir branches. If very large Gourds or Pumpkins are wanted all except two of the earliest and strongest fruits should be cut off; in fact, it is advisable to take off all female flowers immediately they are detected, thus throwing all the energy into the two fruits left on. No stopping or pinching out of the points of the shoots is necessary, and whether the weather is wet or dry a soaking once a week with weak liquid manure will be of immense benefit. This applies to all plants, whether intended for very large fruits or for an ordinary crop.

Another plan is to sow the seed in the open ground where the plants are intended to be grown about the middle of May, putting handlights or even inverted flower-pots over the seeds till they germinate, and gradually hardening off as the seedlings advance.

*Varieties.*—These are very numerous—some seedsmen offer as many as fifty distinct varieties—but it may be stated that all the Pumpkin, Squash, and Turk's Cap varieties are excellent for eating purposes. King of the Mammoths, or Hundred-

weight, is the largest variety, often growing to 140lbs. or more in weight without anything more than ordinary attention. Other desirable ones are Spanish Gourd, a strong grower that is netted like a melon; Chestnut Squash, of excellent quality, and an abundant bearer; and Turk's Cap, a very prolific Gourd of good quality.

*Pests.*—One of the worst pests is mildew, which is induced by cold, changeable weather, drought, and poverty of the soil—the latter two causes may be remedied by giving plenty of water and plant-food, and after this spraying the plants with  $\frac{1}{3}$ oz. liver of sulphur dissolved in 1gall. of water. If Aphis attacks the plants there are many reliable insecticides on the market that will quickly eradicate this pest if used according to the directions supplied with them.

*Manures.*—Provided the ground has been prepared as advised, no manure in any form should be given till the first fruits are set, for though such heavy feeders it is quite possible to overdo it, and by beginning to feed too early the plants may become so vigorous that the female fruits that show may not set and they may produce nothing but stems and foliage. When the fruit is first set, then liquid manure will be advantageous. A little guano or a little sulphate of ammonia, each at the rate of 1oz. to the square yard, is first-rate as a change of food, but care must be exercised that none falls on the foliage or stems.

### HORSE-RADISH. (*Cochlearia Armoracia*.)

Probably no vegetable suffers so much neglect as this. Any part of the garden supposed to be unfit for any other crop is planted with Horse-Radish, and no attention is paid to the bed beyond visiting it for roots when they are wanted. No wonder, therefore, that such roots are tough and stringy, and very different from those sold in Covent Garden. To obtain very fine, thick, tender roots the ground should be trenched at least 2ft. deep, putting in a liberal dressing of fresh manure in the bottom, and some rotted manure 1ft. from the bottom of the trench. After levelling the surface, a line should be drawn across the bed, and a hole made with a crowbar 1ft. or so deep every 18in., and in this a piece of root about 1ft. long should be inserted. It does not much matter how thin the root is; it will make a fine thick root in two years. Then other lines or rows should be made 18in. apart, and treated in the same way. February is a good month to plant. The after-treatment consists in keeping down weeds, and when roots are wanted it is an easy matter to start on a row at one end, and follow on as required.

**KALE.** See Borecole.



PUMPKIN, WITH LEAF AND MALE AND FRUITING BLOSSOMS.



**KOHL-RABI or KNOL KOHL.** (*Brassica Caulo-rapa*.)

This vegetable has not become so popular with gardeners as with farmers, and the difficulty of properly cooking it may be the cause, as it is usually sent in too large and too old to be really good. Any deeply dug, well manured soil is suitable, sowing the seed thinly in drills about 18in. apart, and after the plants are well up, thinning out to 1ft. apart in the rows, keeping the Dutch hoe going to prevent weeds from getting troublesome. No manure will be necessary during the growing season, and insect pests are rarely any annoyance. The White, and the Purple are the only varieties grown in gardens.

**LAMB'S LETTUCE.** See **Corn Salad.****LEEK.** (*Allium Porrum*.)

One of the finest of vegetables in its season and of great medicinal value, but not so often cultivated as it deserves to be. For exhibition purposes the seed must be sown in gentle heat in January in boxes or pans, keeping the seedlings near the glass to prevent them from becoming drawn. As the seedlings advance, they should be potted singly into small pots; or they may be pricked or transplanted into other boxes or pans about 3in. apart, using a compost of half loam and half dry rotted manure, and keeping the plants well watered, and near the glass. A little weak liquid manure or soot water as they become well rooted will be beneficial. After gradually hardening them off, they should be planted out in trenches at the end of March or early in April if the weather is favourable. The trenches should be 15in. to 18in. deep, and as much wide, with 6in. of good farmyard manure in the bottom, and a few inches of rich soil on the manure. In this the plants should be put in a double row and about 1ft. apart, and well watered at once to settle the soil about them. In dry weather liberal supplies of diluted liquid manure should be given, and no earthing up done until the plants are from 1ft. to 15in. high, continuing this earthing up as the plants grow, until eventually there is 1½ft. or more of blanched stem.

For ordinary crops it will be soon enough to sow the seed in beds or drills early in March, always sowing thinly, and when large enough to handle the seedlings should be lifted in moist weather, and planted 1ft. apart each way on ground that has been deeply dug and well manured. In planting it is a good plan to make a hole with a "dibber"—say, one 6in. or 8in. deep—and in this to drop the plant, holding it upright by the tips of the leaves and pushing a little soil into the hole to cover the roots, leaving the orifice open. This will shelter the plant, retain moisture, and by gradually filling up the hole as the plant grows, from 6in. to

8in. of blanched stems are obtained by the time they are ready for table.

Another method is to plant the Leek like an ordinary crop on the level, 1ft. apart each way, growing them as strongly as possible, and though not so tender as blanched stems, they are very good for late use, and improved in flavour by frost. As the plants progress, keep down weeds by the constant use of the Dutch hoe.

*Varieties.*—There are a fairly large number of these, but the best are the Lyon, Selected Musselburgh, and Ayton Castle.

*Manures.*—As all Leeks revel in plenty of moisture, and are gross feeders, in addition to the frequent applications of diluted liquid manure already recommended, any soluble, quick-acting artificial is beneficial when the plants are established. An occasional application of 1oz. of sulphate of ammonia to the square yard is excellent for a change; or the same quantity of a good grade of guano may be used. Soot water is also appreciated, but care should be taken that none of the chemical manures named fall on the foliage, or it may be burnt by the contact.

*Pests.*—After many years' experience, we have never had any attack of any injurious pests, attributing this immunity to the culture advised, and keeping the surface soil constantly moved.

## LETTUCE. (*Lactuca sativa*.)

This is such an indispensable crop that it is grouped here under three headings—winter, summer, and autumn. Taking the winter supply first, intensive culture, or French gardening as it is termed, has made the Lettuce as easy to purchase or grow in winter, if one possesses the means, as in the midst of summer. Seeds should be sown from the middle of August to the end of September, the first sowings being on warm borders and the later ones in frames. As the seedlings advance, they should for the early supplies be pricked out in frames, such as cucumber or melon frames, the soil of which being rich will grow them to perfection, putting in the plants about 6in. apart each way, giving a good watering after planting, and taking care to water only on bright, sunny days afterwards, so that if done in the morning the surplus moisture will be dried by night time. Air should be admitted on all favourable occasions to induce a sturdy habit and the formation of heads or hearts as they are termed. The plants outside should be protected in bad weather with fir or other branches, and as a frame is cleared of its crop another batch of plants from the outside should be taken up and planted in it, thus giving a regular succession. In mid-winter it is advisable to make up hotbeds and grow the Lettuce in

the frames placed thereon. From January onwards seed may be sown in boxes, the pricked-out seedlings being taken up carefully when large enough and re-planted in frames on hot-beds. These will make fine, large plants if well looked after, always avoiding too much coddling, and endeavouring to get the plants as strong as possible. This will enable them to resist mildew or other injurious attacks. As far as possible aim at keeping the soil neither too wet nor too dry in the frames.

In the Summer Lettuce section may be included the late spring supply, seed for which is sown in gentle heat in February and the seedlings transplanted again into boxes when large enough to handle, and after being gradually hardened off planted out on warm borders at the end of March or early in April, about 8in. apart each way. At the end of March a sowing may be made on a warm border, and the seedlings planted out later 1ft. apart. If a small sowing is thus made every fortnight, and the seedlings are planted out when ready in showery or dull weather, there will be a constant supply of quickly-grown Lettuce all through the season.

For autumn or late summer it is more difficult to maintain a regular supply, and for this reason it is a good plan to sow the seed very thinly where the plants are to grow permanently, and not to transplant, but to thin out the seedlings to 1ft. apart in the rows or drills. If transplanted after the end of June such plants are very liable to bolt at once to flower, so that it is advisable on most soils, especially those of a hot or light nature to sow Lettuce where it is to stand from the end of June to the middle of August. If the soil is kept hoed, and an occasional good watering with diluted liquid manure given, it will be quite an exception for any of the plants to bolt, and large, fine, solid hearts will be produced in abundance. The Lettuce is not at all particular as to soil, providing it is rich, moderately deep, and not water-logged; nor is it always necessary to manure specially for this crop, as it will do well on ground that has been well manured for a previous crop, or on land that has been recently deeply moved, such as on ridges between celery trenches, where it can be sown, thinned out, and the crop matured before the celery requires earthing. One thing is essential besides, and that is a light, open position free from shade or drip from trees, or from tall-growing crops. Lettuce grown in such positions is always thin, flabby stuff, lacking in all the good points a well-grown Lettuce should possess.

*Varieties.*—These are so numerous as to puzzle novices. Early Paris Gem is a capital variety for use in winter when grown in frames. Golden Ball is another Cabbage variety of the same type; a fine frame variety. Tom Thumb, although

an old variety is still excellent for frame culture in winter, or for sowing very early in the year for spring use. Early Paris Market is another fine frame variety for winter use. Dunnett's Giant Winter Cos and Giant Bath Cos are two hardy varieties to stand the winter on a warm sheltered border, but of no value in frames. Salad Romaine is a Cabbage variety much esteemed and largely grown round Paris, and first-rate for summer and autumn use. Crystal Palace is the finest of all the Drumhead type of Cabbage Lettuce, standing hot weather admirably. Paris Green and Paris White are two of the best flavoured Cos varieties grown for summer and autumn consumption. Sutton's White Heart is a very large Cos variety, standing heat and drought exceedingly well, and very reliable for summer use.

*Manures.*—Besides diluted liquid manure, such a quick-acting manure as sulphate of ammonia or nitrate of soda at the rate of 1oz. to the square yard is excellent if applied when the plants are beginning to form hearts, not before, otherwise there will be a spread of leaves of great size, but little or no heart. Peruvian Guano at the same rate to the yard is very invigorating, but must not fall on the foliage, as it would burn the leaves. After applying any of the above it should be lightly hoed into the soil, so that when rain falls it can be easily washed down to the roots.

*Pests.*—Mildew is one of the most serious foes attacking the plants in frames and under cloches, and as it is most difficult to eradicate, it should be prevented as far as possible by careful ventilation and careful watering. If the plants are not too large, a spraying of  $\frac{1}{2}$ oz. sulphide of potassium dissolved in 1gall. of water will check it. Slugs are sometimes very troublesome, but as a rule a dressing of soot will keep these enemies at bay. Caterpillars are prevalent in some seasons, and the best remedy is to go over the plants daily, picking them off and frequently hoeing the surface soil.

## MAIZE. (*Zea Mays*.)

Of late years this vegetable has become so much better known and appreciated that its culture is extending annually, and in many parts of the kingdom it is not only grown in the gardens but in fields as a farm crop. The seeds are best sown in gentle heat at the end of March and the seedlings afterwards potted singly in small pots, then gradually hardened, and planted out in soil that has been well treated for a previous crop, or moderately manured for the maize, putting the plants out 18in. apart each way. The after culture consists in keeping down weeds by hoeing. By July the cobs of seeds will be fit for use, and it is important that they are cut while the seeds are pulpy, and before they get mealy. When



cooked in this state it is a very good dish, and will always be grown in future.

*Varieties.*—Nearly all seedsmen have a specially selected early variety, all of which are suitable for growing in this country, but Early Minnesota and the large Early Eight-rowed are two good varieties, and even the ordinary Maize sold by corn merchants will succeed very well if sown as advised above.

*Manure.*—Diluted liquid manure suits this crop better than anything.

*Pests.*—So far we have seen no insect or other pests attack the plants in this country.

### MARJORAM. (*Origanum.*)

Two forms of this herb are cultivated—Pot or Perennial Marjoram (*Origanum vulgare*) and Sweet or Annual Marjoram (*Origanum Majorana*). The former is more frequently grown in gardens, as it is so accommodating that once planted it will go on for years yielding its leaves for flavouring purposes. The seed may be sown any time between the end of March and the end of August, and the seedlings planted out in sunny position 18in. apart each way. As a rule, a few plants only are sufficient for a moderate establishment.

Sweet or Annual Marjoram is superior to the Perennial variety, being of better flavour, and so easily and quickly grown that seeds sown at the beginning of April will produce plants ready for use by the end of May. Early in June it is a good plan to make another sowing; these two sowings will afford a continuous supply. The seeds should be grown very thinly in fairly good soil, in drills 1ft., and the seedlings thinned to about 8in. apart in the rows; no other attention is needed except keeping down weeds.

### MINT. (*Mentha viridis.*)

A most useful herb, and one that should find a place in every garden. To grow this plant really well a partly shaded situation is best, and a soil moderately rich, and not likely to be very dry in summer. In spring young shoots with some roots attached should be taken off the old plants and planted 1ft. apart each way. Water should be freely applied till the plants are established, weeds kept down, and the tops cut off in October. Such a bed will go on perfectly satisfactorily for several years.

*Pests.*—The Mint Rust (*Puccinia mentha*) is the worst foe of Mint, and this fungus is usually induced by bad cultivation. In such cases make a start in another part of the garden with a clean stock, adopting the above method.

*Manure.*—The Mint bed should receive a mulch of well-rotted manure in February.

### **MUSHROOMS.** (*Agaricus campestris.*)

Few vegetables are more appreciated or in greater demand than these delicious fungi, and few things are more easily grown. The most important point is to procure horse-droppings only from dry-fed horses—those receiving hay and corn. It should be collected every morning and placed in an open dry shed and turned daily, working out all the long strawy particles, and leaving the heap not more than 1ft. deep after turning. This will tend to sweeten as well as to dry it to some extent. When there are sufficient droppings to make a bed the whole should be thrown into a heap; this will quickly generate a great heat, and throw off in vapour most of the impurities in the manure, but every morning this heap should be turned thoroughly until the manure is in a fairly dry condition. This process usually takes a week. The manure then will be in excellent order for making the bed, which should be about 1ft. thick, and made quite firm by treading or beating. For a few days the bed will become very hot, and no spawn should be inserted till the heat has subsided to about 70deg.

The beds may be of any length, but as a rule a bed 3ft. to 4ft. wide is best, as it is then easy to pick the Mushrooms, or do anything else necessary without treading on them. If there is no suitable place for beds, fair crops of Mushrooms can be grown in boxes, deep pans, &c., preparing the manure as described. After making up the beds and waiting for the heat to subside, the spawn, which is usually in "cakes," is broken up into pieces of the size of an egg, and inserted about 1ft. apart and 2in. deep over the whole bed, making the manure perfectly hard and firm over the spawn. After this the bed is at once coated with fibrous loam, not too dry, and not so wet as to be sticky, and 2in. thick. No watering should be necessary till the beds come into bearing, which will usually be in about six weeks from the time of spawning. A temperature of 50 to 55deg. is most suitable, and if the thermometer occasionally runs up to 60deg. no harm will ensue. A dark place, like a disused cellar in winter, and a cool shed or cellar in summer, where the temperature already advised can be maintained, is the most suitable place. When the beds are showing signs of exhaustion, a good watering with 1oz. of agricultural salt, or 1oz. nitrate of soda to one gallon of water is a capital reviver. A good bed will be productive for several months, and if a succession is desired it is obvious that new beds must be made accordingly. From the time the beds are spawned it is imperative that a moderately moist atmosphere be maintained by damping the

floor and walls, morning and evening, with warm water, as a moist growing atmosphere assists the running of the spawn, and later on is necessary for the crop.

Outdoor Mushroom beds are made by many market growers, but owing to the risk of chilling from snow and heavy rains a great many cultivators now make their beds in large cheap sheds. Such beds are of ridge shape, about 3ft. wide at the base and 3ft. high. These beds are made very firm, with the spawn put in on both sides, then coated with soil, and covered with a foot or so of straw. It is astonishing what huge crops are produced in favourable years. In gathering the Mushroom the stem should be twisted round to detach it from the bed, as it is never advisable to leave a cut stem in the bed. On land naturally prone to produce Mushrooms spawn may be inserted in the pasture fields at the end of April or early in May, putting the pieces of spawn (the size of a hen's egg) in about 15ft. apart and 3in. deep, and afterwards treading the turf firmly down. In favourable years good crops will be the result. There are two kinds of spawn sold, that in "cakes," and the Loose or French spawn: the former is generally the better.

*Pests.*—Woodlice and occasionally slugs are troublesome, the former being much the worst. Trapping is the best means of dealing with these creatures, or boiling water may be poured in their haunts, providing the water does not penetrate the beds. There are also several injurious fungi.

### **MUSTARD.** (*Sinapis alba.*)

This requires similar treatment to *Cress* (which see).

### **NASTURTIUM.** (*Tropæolum minus.*)

Of late years the green seeds of this plant have increased in popularity for mixing with salads and other purposes. The dwarf varieties are the most prolific, and take up the least space. The poorest soil is best, as the plants flower far more freely, whereas on rich soil they make great masses of foliage and comparatively few fruits. The seed should be sown early in May very thinly, and the seedlings thinned out to 18in. apart each way. Any variety is suitable, there being no difference in quality or quantity of fruit, which is used green.

### **NEW ZEALAND SPINACH.** See *Spinach.*

### **ONION.** (*Allium cepa.*)

One of the most useful of all vegetables, a supply being required all the year round. Very few have any idea how deeply the Onion will root if the soil is sufficiently porous and rich. For that reason deep trenching and well manuring from the bottom to the top of the trench is essential. Again, when

sown on land prepared in this way, insect and other foes are seldom much in evidence. Onions can be, and are, grown on soils that are not so deeply worked, but the crop is much lighter, and the produce inferior to that grown on ground that had been thoroughly and properly cultivated. On both light and heavy soils the trenching should be done as early in the winter as the weather and state of the soil will permit, working in good farmyard manure, not too rotten, at the same time leaving the surface as rough and uneven as possible, so that the action of the weather will break it up and make it friable for sowing later on. At the end of February or early in March, when the ground is in a nice workable condition, a dressing of soot and burnt garden refuse should be spread over it and lightly forked in. It should then be levelled with a wooden rake, all stones of large size being removed, shallow drills drawn 1ft. apart, and the seed sown. If not sown at once and rain fell the soil would become "set," and not work so freely or be in such a fine state for sowing for a month or two afterwards. On very light soils the old well tried method of treading the drills after sowing is a good one, as it makes the ground firm and better for the seedlings as they come up; but on heavy ground merely filling the drills by levelling with a wooden rake is best. If very fine bulbs are wanted, the seedlings should be thinned out to 6in. apart in showery weather, drawing out every alternate plant as required for use, so that eventually the Onions stand 1ft. apart in the rows. During the summer the Dutch hoe should be constantly at work, not only to keep down weeds, but also to prevent undue evaporation of moisture. If pickling Onions are required, the seed is best sown at the end of March or early in April, and no thinning done, as the object is to keep the bulbs very small. The very large perfect Onions seen on the exhibition table are obtained by sowing the seeds in boxes of rich, fine soil in January in a gentle heat, and when large enough the seedlings are transferred singly to small pots of good soil kept close to the glass, and after being gradually hardened are planted out 1ft. apart each way in April, on ground that has been deeply trenched and heavily manured.

For autumn sowing in August the Tripoli section is chosen in most gardens, but as a rule it is nothing like so reliable and serviceable as the Ailsa Craig or Bedfordshire Champion type. The latter are really hardier than the Tripolis, they make finer bulbs, will keep till very late in the following year, and are seldom, if ever, attacked by Onion Maggot or Onion Mildew. The Tripolis on the other hand are all liable to bursting of the bulbs, and never keep long after attaining full size. It should be known, too, that all autumn-sown Onions make the finest and best bulbs if transplanted in March or April, and are far superior in every way to those non-transplanted.

**Harvesting.**—On the proper harvesting of the Onion largely depends its keeping properties, and in most seasons the crop is ready to lift up by the end of August. This is best done on a dry day, and as the Onions are pulled up they should be laid on their sides in rows, with the roots exposed to the action of sun and wind. In a few days it is advisable to turn them, continuing this process till the tops are quite dead. On a dry day all may then be gathered up, conveyed to a frost-proof shed, and spread out thinly again, removing a portion of the top of each Onion at the same time. On wet days the bulbs can be tied by the short top, left in wreaths, and hung up. They keep admirably this way, as the air can play round them, thus maintaining them always dry.

**Varieties.**—Ailsa Craig, one of the best for spring or autumn sowing; Cranston's Excelsior, a hardy and good keeper, suitable for spring or autumn sowing, and one of the best to sow under glass for producing exhibition bulbs; Bedfordshire Champion, a medium-sized variety, handsome, hardy, a very good keeper, and mild flavour; White Spanish, a fine quality Onion and a good keeper; Covent Garden Pickling; Carter's Pearl Pickler, a pretty little variety that matures very quickly; Giant Rocca, one of the best of the Tripoli type. There are other varieties or forms of Onion, such as the Tree Onion, the Potato Onion, and the Welsh Onion, but none of them have any special qualifications to recommend them.

**Manures.**—As the Onion is a heavy feeder frequent applications of liquid manure in a diluted state are beneficial; while  $\frac{1}{2}$  oz. of sulphate of ammonia to the square yard once a month during May, June, and July is excellent. A light dressing of soot early in June will assist the plants, and help to keep the Onion Fly away. Feeding should cease at the end of July. On light, hot soil a mulch of short manure applied in June is advisable, as it feeds the roots and keeps the soil moist and cool.

**Pests.**—One of the most dreaded and common enemies is the Onion Fly, the larva of which bores into the base of the bulb, destroying the roots, and killing the plants. Pulling up and burning infested plants reduces future attacks, but the best means of meeting this pest is thorough and deep cultivation, and autumn sowing, as it is the spring sowings that suffer. Onion Mildew (*Peronospora Schleideniana*) in some seasons is most injurious, especially in a wet or cold changeable year. Immediately it is detected, the plants should be gone over, the infested leaves taken off and burnt, and the whole bed sprayed over with  $\frac{1}{2}$  oz. sulphide of potassium dissolved in 1 gall. of water. If this is promptly carried out, the mildew will be checked, and the crop saved.

**PARSLEY.** (*Apium petroselinum.*)

Although such a useful and esteemed plant, there are many gardens where it is one of the most difficult things to grow—the seed refusing to germinate, or it is attacked by enemies in the soil, or the young plants eventually wither and die. In such cases, in addition to deep digging, it is advisable to work in a moderate supply of quicklime when digging, forking it over again about a fortnight afterwards, to mix the lime thoroughly with the soil. At the end of March the seed may be sown in shallow drills, often by the side of a kitchen garden path, putting in the seed thinly and thinning out the seedlings 1ft. apart. Another sowing should be made about the middle of June for winter use; seedlings from this also should be thinned out to 1ft. apart. This double sowing is best done every year, as the plants run to seed the second year, and are useless.

*Varieties.*—There are a good number of varieties, but such deeply curled varieties as Emerald Green, Dwarf Perfection, and Dobbie's Selected, are all three very handsome, hardy, sturdy, and equally adapted for flavouring or garnishing.

*Manures.*—If the soil has been prepared properly, no manure is required for the growing crop.

**PARSNIP.** (*Pastinaca sativa.*)

As is the case with most root-crops, the Parsnip must have a deep root-run, with no manure nearer than 1ft. from the surface, otherwise the roots become forked, and of little or no value. Ground that has grown Celery the previous year is very suitable for Parsnips, as the manure is deep down, and no other manure is required when preparing the ground. Failing that, the ground should be deeply dug or trenched in the winter, placing the manure at the bottom of the trench, and leaving the surface as rough and uneven as possible. If the weather is favourable about the middle of February, a light dressing of soot may be put on the ground, and the whole levelled down, breaking up any lumps, and making a fine surface. On this drills should be drawn 15in. apart, and the seed sown very thinly, as the plants will need thinning out to 1ft. apart in the rows. Early in the season weeds must be kept down, but later on the plants will grow so vigorously that the foliage will smother any weeds, except very strong, coarse ones, which can be pulled out by hand.

*Varieties.*—Very large Parsnips are never so useful as those with roots of medium size, thick at the crown, and tapering rather sharply to the point. Such varieties are the Student, Jersey Favourite, and Hollow Crown. If an exhibition variety is needed, the Maltese is a very long, tapering, handsome one to grow.

**Storing.**—Parsnips are always the best flavoured when fresh from the ground, but this means covering up the crowns with a thick layer of straw or similar material, and also leaves the ground undug for the winter. The best method of dealing with the roots is to dig them up in November, and either clamp them like Potatoes, or store them in a cool shed or cellar, where they can be safe from frost. If stored in sheds or cellars the roots should be stacked in dry sand; this will keep them plump and of good flavour.

### PEA. (*Pisum sativum*.)

Probably the most appreciated of all vegetables, and the longer the season can be prolonged the better. Early in February seeds of an early dwarf variety should be sown on a warm border that has been deeply dug and liberally manured, with a little lime or mortar rubble worked in, making the drills about 18in. apart, and sowing the seed thinly in the drills. If mice are prevalent they should be trapped. Immediately the seedlings appear through the soil some small twigs, about 1ft. high, should be placed on each side; these will act as a protection, and help to keep birds from eating the tender young growths. About the middle of February another sowing of an early dwarf variety may be made on a warm border, and after that a sowing of taller varieties should be made successively, the rule being to put in a fresh sowing immediately the last one is through the soil. This should be continued to the middle of June, after which it is seldom worth sowing. From the beginning of June onwards it is highly beneficial to place a mulch of strawy manure on each side of the Pea rows, feeding them and keeping the soil cool and moist at the same time.

To grow peas really well deep cultivation and plenty of manure, and the addition of lime in some form, are essential. If quicklime is employed, it should be put in some time before the manure, never with it. Another important factor is a sunny, open position, and it will be found an advantage if the rows run north and south; the sun then gets on both sides of them, and the crop is equally good on either side. If sown in lines running east and west, there is always a north side to the row, and there the lightest crop will always be found.

**Varieties.**—The varieties named are in the order in which they should be sown: Chelsea Gem, a dwarf variety, growing 15in. to 18in. high, of excellent flavour and first-rate for sowing under glass, or early in February outside; may be sown 18in. apart between the rows. Little Marvel, a well-named variety, very sturdy, and a good cropper, and of exquisite flavour; may be sown any time in February in rows 18in. apart. Daisy, second early, growing 2ft. to 3ft. high. The Peas are of a beautiful colour and delicious flavour; may be

sown early in March in rows 3ft. apart. Alderman Selected, beautiful Marrowfat variety, growing to 5ft. or 6ft. high; suitable for exhibition, a great bearer, and of excellent quality; may be sown any time between the middle of March and the end of April in rows 6ft. apart. Perfection Marrow, an improved form of Stratagem, but is stronger in growth and larger in pod; may be sown at the end of March or early in April, in rows 4ft. apart. Essex Wonder, valuable variety for standing hot weather, of robust habit, growing about 5ft. high, well filled, and the peas of very good flavour; may be sown in April in rows 5ft. to 6ft. apart. The Gladstone, an excellent summer variety, 5ft., of strong habit, a great cropper, and superior quality; may be sown at the end of April or early in May in rows 5ft. apart. Ne Plus Ultra, one of the finest of all late Peas, about 6ft. high, and producing an abundant crop of large, delicious Peas; may be sown about the middle of May in rows 6ft. to 7ft. apart. Veitch's Autocrat, one of the best known and popular late varieties grown, continuing bearing for a long time, the quality is excellent; may be sown at the end of May or early in June in rows about 4ft. apart, as it grows 3ft. to 4ft. high. Veitch's Chelsonian, a tall-growing variety (6ft.), very prolific, and of first-rate flavour; may be sown early in June in rows 6ft. apart. Ringleader, although an early variety, is a good one to sow about the middle of June in rows 4ft. apart; often crops very late, and of good quality. Sugar Pea, a strong-growing variety, 5ft. to 6ft. high, the pods are picked quite young and cooked whole, they are then very good; may be sown in April.

**Manures.**—A mulch of strawy farm-yard manure put on immediately after the rows are staked is most beneficial to Peas. And in addition to this, an application of 10z. Peruvian Guano to the square yard, applied when the plants are in blossom, will give vigour, cause the pods to develop quickly, and increase the size of the Peas. Diluted liquid manure is of great benefit in dry weather. A thorough soaking should be given well saturating the soil.

**Pests.**—One of the worst pests is Mildew, which sometimes attacks the plants so badly as to stop all growth. The Pea Weevil (*Sitona lineatus*) is extremely troublesome in some gardens, eating the young shoots. For the Mildew, dissolve ½oz. sulphide of potassium in 1gall. of soft water, and spray thoroughly in the evening; and for the Pea Weevil, dissolve 2oz. carbolic soft soap in 1gall. of water, and apply this also in the evening. The Pea Beetle (*Bruchus pisi*) attacks the seeds, boring holes into them; such Peas ought to be promptly burnt. A first-class seedsman rarely allows any such seed to pass out of his hands. Thrips are troublesome in dry seasons





LEEK.



PEA PLANT IN FLOWER  
AND FRUIT.





on light soil, plenty of water overhead and at the roots is the best preventative against this pest. On newly-broken up land Wireworm is a difficult foe to deal with, and it is a good plan to put a barrowload of quicklime to the rod before sowing, working it well into the soil, also keeping the surface soil constantly moved, as this disturbs the grubs, exposing them to birds and the weather. Slugs are easily kept at bay by dressings of soot, and caterpillars should be either hand-picked or fought with the carbolic soft soap wash suggested above. Of late years the Pea Moth (*Endopisa nigricana*), whose caterpillars live in the pods and afterwards pupate just beneath the soil, has caused much injury. Quarters known to contain the pupæ of this pest should be raked over in winter, thus exposing the creatures to insectivorous birds.

### POTATO. (*Solanum tuberosum*.)

Without question this is the most important economically of all vegetable crops, and no vegetable is less fastidious in regard to soil, situation, and even culture, than the Potato. Practically any land that is not water-logged will produce a crop, but the best results are always obtained from land that has been deeply worked and heavily manured for a previous crop, and which has had some lime worked in at the rate of a barrow load to the rod. One of the best ways of growing Potatoes is to dig the ground over after a crop of Peas or Beans, putting on a dressing of lime, level down the soil, and sow it over with Mustard seed at the rate of 2 bushels to the acre. When the Mustard is about 1 ft. high dig it in, and leave the surface as rough as possible for the winter, fork it over again in March, and plant the tubers. The produce will rarely be attacked by wireworm or other insect pests, the crop will be heavy, and the tubers of excellent quality. This refers chiefly to the mid-season or late crops: early crops are generally grown on warm borders or other sheltered positions, the border being dug in the winter, the material from spent hotbeds or Mushroom-beds being first spread over the ground, and dug or forked in. In February, the "sets" are put in about 5 in. deep, and when the tops begin to push through the soil, earth is drawn over them to protect them from frost. Fir branches or laurel branches put over the tops on very cold nights are well worth the labour and trouble, because if the tops become frosted, not only are they seriously checked, but the crop is much lighter, and the tubers are smaller. For early crops under glass or on warm borders it is an excellent plan to sprout the tubers by placing them upright in shallow boxes in a light, moderately warm place, causing the tubers to grow more quickly when planted, and giving a little earlier produce.

Early, midseason, and late Potatoes should be "earthed up" as soon as large enough; this protects them as well as gives

support, and encourages growth, besides burying any small weeds that may be growing. When early varieties have formed tubers large enough for use, they may be lifted as required, but all varieties intended for storing should remain in the soil till the tops decay, and after lying a few hours in the sun and wind to dry they should be sorted into two sizes—the large ones for cooking, and the smaller ones for seed—and stored separately. All tubers touched with disease should be boiled for pigs or poultry, but never given to them raw, as this is a fruitful source of spreading disease.

*Forcing.*—Several methods of forcing Potatoes are in vogue. One is to make up hotbeds at the end of December or early in January, putting on them about 6in. of fine or sifted soil, such as old potting soil, and planting the sets 1ft. apart each way in rows, giving the usual frame treatment. Another plan is to put pots or boxes filled with rich soil, well drained, in a greenhouse. One “set” in a 9in. or 10in. pot will be sufficient. The pots or boxes should be kept near the light, to induce a sturdy growth, and as the plants increase in size diluted liquid manure should be given once a week: this will ensure an astonishingly good crop.

*Storing.*—To ensure Potatoes keeping well, it is essential that they should be “lifted” when the soil will part freely from the tubers. Further, they should be lifted as soon as the tops have died down. If some are not quite dead it does not matter. After being dried and sorted, they should be taken straight to the shed or clamp prepared for them. If in sheds, it is a good plan to have a layer of straw or bracken under the Potatoes as well as over them: though the shed may possibly be frost-proof, exposure to the air will cause all those on the outside to turn green, spoiling them for use. A clamp is made by throwing the soil out in the form of a trench 5ft. wide and 1ft. deep, and as long as may be necessary to take the crop. It is always advisable to have the clamp on slightly sloping ground, so that no water can lodge in the bottom. On the bottom should be arranged a layer of straw or bracken, and on this the Potatoes in a long heap, bringing the heap to a point, and making it from 3½ft. to 4ft. deep. These should be covered with a good thickness of straw or bracken, and the clamp with 6in. of soil beaten firm and even, so that all wet will be thrown off instead of soaking through into the Potatoes. If drain-pipes are inserted, reaching through the covering material to the outside, and at intervals of 6ft. along the ridge of the clamp, these will act as ventilators, letting out any heat or steam that might generate. A wisp of straw stuck in the top of the drain-pipes will keep out wet and frost, and permit the heat to escape at the same time.

*Varieties.*—The following may be recommended as reliable:—Sharpe's Victor, one of the best for growing in pots, boxes, frames, or early border; tubers medium sized, roundish, white, of excellent quality; plant 1ft. to 15in. apart. Sharpe's Express is also excellent for all the purposes named in the preceding variety, with tubers moderately sized, kidney-shaped, of first-rate quality, and a heavy cropper for so early a variety; plant 1ft. to 15in. apart. Sir John Llewelyn, a splendid variety when true to name; well adapted for planting as a first or second early in the open, and may be used as soon as the tubers are big enough, or may be lifted and stored for use to the end of the year; a great cropper and a good disease resister; plant 2ft. apart between the rows. Duke of York, a handsome second early dwarf and an abundant cropper; tubers medium-sized, of good shape and superior quality; plant 20in. apart between the rows. Duchess of Cornwall, a second early or mid-season variety of great merit, an exceedingly heavy cropper, with excellent table qualities, and a good disease resister; plant 20in. between the rows. The Factor, one of the finest croppers in commerce, equally good for midsummer or late use; it is a good disease-resister, handsome, and of good quality; plant in rows 3ft. apart. There are many other varieties, but those enumerated are sufficient to keep up a supply of the best quality for the largest establishment all the year round.

*Manures.*—Widely different systems of manuring Potatoes obtain in different parts of the country. In some, the land is drawn up in ridges, and in the furrows are placed 4in. to 6in. of farmyard manure, on this the "sets" are planted about 1ft. apart, and the ridges are then split with a plough which covers up the manure and "sets." These are under a ridge, and already earthed up before the haulm appears. This plan seems to answer very well, but we prefer manuring well for a previous crop, or else manuring in the winter, and after planting in the spring to give a chemical manure when the Potatoes are hoed the first time, say when the haulm is only 2in. or 3in. high. For most soils 3cwt. of superphosphate and 2cwt. of kainit (mixed together) per acre, or 30z. of superphosphate and 20z. kainit to the square yard, is a capital chemical, and should be sown between the rows and not allowed to fall on the young haulm. Another good manure for application immediately the tops or haulms appear through the soil is 3cwt. of guano per acre, or 30z. guano to the square yard, taking care that the guano is of good grade. It is a mistake to use nitrate of soda or sulphate of ammonia, as it not only induces much haulm, but the tubers are close and rather soapy when cooked.

*Pests.*—There are so many enemies of the Potato that only

a few of the worst can be touched upon. One of the chief is *Phytophthora infestans*, which is probably known wherever the Potato is grown. It first appears in the form of brownish spots on the leaves, afterwards on the stems, until all the tops or haulms are destroyed, giving off a disagreeable smell. Once the disease has started there is no cure, but liming the soil before planting and spraying with Bordeaux mixture before there is any sign of the disease, are good preventives. It is also very important to plant only good disease-resisters. Leaf Blotch is another fungus that may become very troublesome. In this case the diseased patches on the foliage are very dark, and the whole plant is of a decidedly unhealthy appearance. Prevention is better than cure, and it will be advisable to adopt the plan given for dealing with the *Phytophthora infestans*. Black Scab is a terrible pest, but we hope that as it must be reported at once under a heavy penalty for not doing so, that it may be stamped out. In this case the tubers are a more or less soft black inky mass, and the only remedy is to immediately burn all infested tubers, and to have no Potatoes or Tomatoes on the same ground for ten years, as the spores are alive for that period. Another disease increasing very much is the one in which an apparently sound tuber, showing not the slightest sign of disease when peeled, and not discovered till cooked, is found bad in the centre. At present it is impossible to give it a name or suggest means for its prevention. Leaf Curl is another fungus usually attacking the stem first. This should be stopped by using a fungicide early in the plants' stage of growth as a preventive measure. Wireworms are always a great pest on newly broken up soil, and even on well worked soils they are occasionally numerous; so also are cockchafer grubs. To keep these at bay, there is nothing equal to deep cultivation, liming the soil, and well working it before planting, and hoeing frequently till the Potatoes are "earthed up." Even in winter if the soil will work freely, it is a good plan to tear it about, exposing these pests to the weather and the keen eyes of insectivorous birds.

### PURSLANE. (*Portulaca oleracea*.)

As a vegetable this is in very little demand, but in some gardens it is liked as a salad. Practically any soil that is in good condition will grow it. A sunny position is necessary, sowing the seeds thinly in drills 1gin. apart early in May, and afterwards thinning out the plants to 1ft. apart in the rows. One or two short rows will give an abundance of leaves. All the attention they require is a good soaking of water occasionally in dry weather. Green Purslane and the large-leaved Golden Purslane are the best two varieties.

**RADISHES.** (*Raphanus sativus*.)

A salad plant that is only enjoyable when young and tender. The object of every gardener is to get the roots as quickly as possible from the time of sowing. The earliest supplies are obtained from sowings made under glass, such as in boxes of good soil in a warm greenhouse and kept near the glass, or in frames on hot-beds. In frames that have been made up for early Potatoes, Radishes may be sown very thinly over the whole bed, and will germinate and develop so quickly that they will be all cleared away before the Potatoes have made much haulm. Whether grown in boxes, frames, or outside thin sowings are essential; if sown thickly, more than half the seed never forms bulbs fit for use, and spoil a large proportion of the other half. To succeed those sown on hot-beds a sowing should be made in cold frames early in February, making up a bed of rich soil about 6in. deep. Cover the frame with a mat on frosty nights. Another sowing should be made early in March on a warm border in good soil; this will continue the supply. Once a fortnight afterwards up to the first week in September a small sowing may be made, scattering the seed broadcast.

A good, rich, moderately firm soil and an open situation where water is convenient are essential, as a thorough soaking is necessary in dry weather, especially on light, porous soils. The seed should be very lightly covered and protected from birds by nets or thread. Should any plants run to seed without forming bulbs, pull them out at once, as they interfere with the good ones.

*Varieties.*—Extra Early Scarlet Olive-shaped, is a very crisp and delicately flavoured Radish, one of the finest of all for forcing, cold frames, or for sowing early outside. In a cold frame it is ready for use in five or six weeks from the time of sowing. Extra Early White Olive-shaped, a white form of the first-named, possessing all its good qualities. Early Gem, a first-rate variety for forcing, as it comes quickly into use, is of good flavour, and makes scarcely any foliage; it may be sown a little thicker than other varieties. Olive Scarlet, a favourite variety for ordinary sowing in the open with bulbs of medium size, handsome, and fine flavour. Long Scarlet, a very fine maincrop variety, with a sweet, nutty flavour. Crimson Giant, an excellent variety for all soils, but specially good for light hot ones, as it grows quickly and stands longer than any other variety without becoming strong in flavour.

*Manures.*—Only manures quick in action, such as diluted liquid manure, 1oz. nitrate of soda dissolved in 1gall. of water, are of much value, but either of the above is beneficial if applied when the bulbs are forming.

**RHUBARB.** (*Rheum*.)

A vegetable in great demand from Christmas until Gooseberries are ready outside, and with suitable structures there is no difficulty in accomplishing this. Taking forcing first, there are many ways in which this can be done. One is to utilise old apple barrels with the ends knocked out, placing these over the crowns or plants, and filling the space between the barrels with fermenting material such as strawy manure and leaves, and treading the material quite firm. A lid should be put on each barrel, and the manure filled up till it stands 1ft. higher than the top of the barrels. If this is done about the middle of November, there should be some very fine "stems" for use by Christmas. A similar bed may be made early in January, which will maintain the supply by coming into use when the November-made bed will be exhausted. About the end of March, the fermenting material and barrels should be removed, when new growths will shortly be made, but none should be "pulled," or rather used, as the plants ought to be allowed to make all the growth they can, and if necessary may be forced again the next winter. Other plans are to take up strong crowns in November, and place them with good balls of earth attached to their roots in a mushroom-house, with a warm, moist temperature. In less than a month a good supply of tender young stems will be ready. Crowns may also be placed under greenhouse stagings with mats in front to keep them dark. Cellars are useful for a like purpose; in fact, all sorts of warm places can be employed to bring on Rhubarb early in the year. When these lifted crowns are exhausted, it is advisable to throw them away. In forcing Rhubarb the aim should be to get it fit for use as quickly as possible by maintaining a moist heat, and not allowing the roots to suffer for want of water. The produce will then be very tender and far superior in flavour to any Rhubarb grown in the open air.

The outdoor cultivation of Rhubarb is very simple, and as this plant is not fastidious as to soil or situation, it may be grown in partial shade or full sun, and on heavy clay or almost pure sand. The best results, however, are always obtained by growing the plants in full sun with a deep and rich root-run. The position is of some importance, as Rhubarb is very untidy when the foliage begins to die down, so that it should not be grown where it might prove an eyesore.

In preparing the site, draining ought to be done if very wet and water-logged, and the ground trenched quite 3ft. deep, with a liberal application of fresh manure worked in from the bottom of the trench to the top. If this is done during the winter, planting may be done at any time when soil and weather permit in February, inserting the crowns or



stools in rows 5ft. apart and 4ft. apart in the rows. This may seem a good deal of space for each plant, but it will be none too much later on. Immediately after planting, a mulch of strawy manure should be spread over all the ground. This will keep the soil moist and more favourable for root action. Any flower-stems that appear should be promptly removed, as they weaken the plants, and in dry weather water should be freely supplied to newly put in plants. After the first year they will need no attention beyond an annual mulch of manure early in March, and allowing no flower stems to grow.

Rhubarb is easily raised from seed sown in March in the open in fine, rich soil, but we do not recommend this plan, as the progeny does not come true to name. It is better to increase the stock by means of division, every small crown quickly making a large plant if put in good soil.

*Varieties.*—Dawe's Champion is one of the best; it is a new variety, of fine colour, size, and general excellence, and one of the best for forcing, as well as outside. Other good varieties are Hawke's Champagne, Linnæus, and Victoria.

*Manures.*—Plenty of farmyard manure in a liquid or a solid form is the most suitable stimulant for this vegetable.

### **SAGE.** (*Salvia officinalis*.)

An easily grown and very useful herb. Seed may be sown early in April on fine soil, and the seedlings transplanted into rows 2ft. apart each way; or cuttings may be put in about the end of August, using a sharp sandy compost, in a shady position. The cuttings will be nicely rooted by the following spring, and be ready for transferring to their permanent quarters. The plants will continue in good health for years if cut back a little annually. For winter use the shoots should be hung up in a dry shed till quite dead, and then stored away; but, as a rule, all the Sage required can be cut from the plants at any time of the year.

### **SALSIFY.** (*Tragopogon porrifolius*.)

This is the much-esteemed Vegetable Oyster so largely used as a winter vegetable. As the roots are the parts used, it is essential that there be no manure near the surface. Early in April drills should be drawn 1ft. apart, and the seed thinly sown and all raked over evenly. When the young plants are large enough, they should be thinned to about 4in. apart in the rows, and afterwards kept free from weeds by Dutch hoeing.

*Storing.*—As a rule, the roots are dug from the open ground as required through the winter, but in places where frost is severe they may be lifted and stored in the same manner as Beet, but are never so good in flavour as those lifted straight from the ground.

*Varieties.*—The Common Salsafy is the hardiest and most universally grown. On light, warm soil Sandwich Island Mammoth is excellent, and larger than the common.

### SCORZONERA. (*Scorzonera hispanica*.)

This requires exactly the same culture as Salsafy.

### SEAKALE. (*Crambe maritima*.)

A highly appreciated vegetable if well grown, and tender. Unfortunately, the crop is often so badly treated, especially in small gardens, that it eventually is given up as not worth growing. To produce large, strong crowns that will give good "heads" when forced, the situation should not be under trees or shaded in any way, but perfectly open, and the soil should be rich and deeply trenched. In the autumn or early winter the ground intended for the crop should be trenched 2ft. to 3ft. deep and heavily manured, leaving the surface as rough as possible for the action of the weather. The most vigorous plants are obtained from seed. As early in the year as the soil will work freely without sticking to the boots or tools, the beds may be levelled by lightly forking, and then raking the surface and drawing drills 18in. apart. The seed should be sown very thinly, and the soil afterwards raked over. As soon as the seedlings are large enough to handle, they should be thinned out to 18in. apart in the rows, and if those not wanted in the rows are carefully lifted, they may all be planted again 18in. apart each way, watering at once to settle the soil about the roots. In two years the "crowns" will be ready for forcing.

Another and commoner method is to raise plants from cuttings. These consist of pieces of the roots from 4in. to 6in. long obtained from the side roots taken off the main root. They are about the thickness of a lead-pencil, and are put in drills about 6in. deep, and at a distance of 2in. apart, a little sharp sand being put on the cuttings. The soil is then filled in and pressed firmly. Practically all the cuttings will root if put in about January or even later, but the early ones make the best plants. Early in April the cuttings will have commenced to grow; they should then be carefully lifted, and all growths except one rubbed off, replanting them 18in. apart in prepared beds. If all the growths were left, the crowns would be small, as also would the heads. During summer the plants should be frequently hoed, and if the weather is dry a good soaking of water will be beneficial; or if diluted liquid manure is obtainable so much the better. If these directions are carried out, in two years splendid crowns for forcing will be obtained.

*Forcing.*—Unless forced and the growth blanched, this

vegetable would be of no value. The methods of forcing are so numerous that even the smallest grower may have Seakale with very little trouble. Any time after the foliage has died down the roots will be ready to lift for forcing. The plants must be carefully lifted, and all the large side roots cut off, leaving the main root as long as possible—10in. to 12in. being the usual length. These roots may be plunged up to the crown in any fairly good soil, and put in heat at any time from the beginning of November onwards. A mushroom-house is one of the best places, as the darkness and moist heat suit admirably, the growth being beautifully white and tender. The roots may be plunged in soil on the floor, or put in large boxes; but in all cases 3in. or 4in. apart should be allowed, and only a comparatively small number should be put in at once, as successive crowns ought to be put in every fortnight to keep a constant supply. After cutting, the roots should be thrown away, as they would be of little use for forcing again. If no mushroom-house is available, the crowns might be placed in boxes of soil, and put under greenhouse stages, with an inverted box put over the top to exclude light; or very large pots may be used, inverting pots of the same size over those containing the crowns. Darkness is essential, as is plenty of water at the roots. Cellars or other warm structures are all suitable for forcing Seakale in pots or boxes.

Outdoor forcing may be carried out by placing Seakale pots—*i.e.*, pots broad at the base, with a movable lid at the top—over the crowns, filling up the space between the fermenting material higher than the tops, after the manner described for forcing Rhubarb outside. For the amateur who possesses none of these conveniences it is a simple matter to cover the crowns with 6in. or 8in. of clean leaves, such as oak or beech, and place pots or boxes over to exclude light, and keep the leaves from blowing away. Such produce is late, but the quality is excellent. One advantage of this outdoor forcing is that it is not necessary to destroy the roots. After removing the fermenting material, or leaves, and gradually exposing, it will be found that after the crowns have been cut for use the roots will send up three or four growths from each; all except one should be rubbed off. In two years, these same plants will be ready to force again.

*Varieties.*—Beddard's Improved, a variety of compact growth, strong constitution, and excellent flavour; Solid Ivory, a pure white variety of great excellence; and Purple, the variety in general use.

*Manure.*—In addition to farmyard manure, 4oz. agricultural salt to the square yard, in March, is most beneficial.

**SEAKALE BEET.** *See Beet.*

**SHALLOT.** (*Allium ascalonicum*.)

In places where Onions are difficult to grow the Shallot is often relied upon to give the necessary supply. Moreover, the bulbs of the latter are now so large in many varieties, that they can very well take the place of Onions. Any good ordinary garden soil will grow the Shallot. At the same time it is advisable to treat the crop properly, and prepare a good rooting medium for it. The soil should be dug at least 1ft. deep in the winter, incorporating some good, well-rotted manure, and leaving the surface soil as rough as possible. Early in February, and as soon as the soil is in a nice friable state, a light dressing of soot should be spread over all the ground, which should then be levelled and broken up. Lines 1ft. apart should be drawn, and the Shallots planted 8in. apart. Single bulbs should be put in, burying them by pressing them into the soil until only the point is above the surface. Needless to state the position should be fully exposed to all the sun possible. The plan of making raised beds is quite unnecessary. The after treatment consists in keeping down weeds, and frequently hoeing between the rows. If very large bulbs are required, it is only a matter of feeding, but the best Shallots are those of a small size, that can be used for pickling or any other purpose.

*Storing.*—In early autumn, when the foliage has died down, the Shallots ought to be lifted, the soil shaken from the roots, and left on the ground till quite dry. They may be then taken into any dry loft or shed where frost does not penetrate, and laid out thinly, so that the air can play on them, thus preventing any decay.

*Varieties.*—The Common, or True Shallot, is still the best for general use, and is quite distinct, being small, pointed, with a greenish base, and often produces ten to twelve bulbs to a clump; it is also one of the best keepers. The Russian Shallot, known by several names, is large, brownish-red in colour, and bears four to seven bulbs in a clump. The Jersey Shallot is a medium-sized, roundish bulb, varying in shape; it is of a mauve colour, and bears six to nine bulbs in a clump. We really question if either this or the Russian is a true Shallot at all.

*Manures.*—The Shallot appreciates a little quick-acting manure, such as diluted liquid manure, or 1oz. sulphate of ammonia to the square yard. When about 6in. of foliage has been made, a reliable guano, at the rate of 1oz. to the yard, while growing freely, is acceptable, but should not fall on the foliage, and a light dressing of soot is always liked.

**SORREL.** (*Rumex acetosa*.)

A little used vegetable. Any deep soil will grow it; and as the plants stand several years after sowing, it is advisable to dig the ground rather deeply, working in a moderate amount

of manure. The seed may be sown very thinly any time in March, thinning out the seedlings later to 8in. or 9in. apart in the rows. In June the foliage will be ready, and if only the large leaves are picked, it will be less trouble to cook, and the plants will yield a much greater supply. When the rows appear to be wearing out—say, in about four years—sow again.

*Varieties.*—There are several species of Sorrel, but the Common Broad-leaved is the best for general cultivation.

### SPINACH. (*Spinacia oleracea*.)

This popular vegetable is extensively grown in private gardens, and for market. The soil for it should be rich, porous, and of moderate depth, and one can scarcely have Spinach too early. It is an excellent plan to prepare a piece of ground in the warm border during the winter, and early in February to spread some burnt garden refuse and a little soot over it, afterwards levelling with a rake and drawing drills 1ft. apart. In the drills thus made the seed should be thinly sown. Some cultivators do not thin the seedlings, but it is more profitable to thin out the plants to about 4in. apart in the rows. In about a fortnight, or so, another sowing should be made, still on a warm border, or sheltered position, and after that a row should be sown between each two rows of peas. If sown at the same time as the Peas, the Spinach will be ready for use, and cleared away before the peas are fit to pick. Spinach can also be sown between the rows of Runner Beans. Not only does this plan economise space, but the shade is a distinct help to it, as it keeps the plants cooler, and they do not rush to seed so rapidly as if sown in full sun. From March to June we prefer to sow Spinach in such positions, but after June comes in it is almost impossible to prevent the plants from "bolting," and it is not worth while sowing again till August. Again, as Spinach so quickly runs to seed in warm weather, it is inadvisable to sow much at once; a small quantity once a fortnight is far better. In dry weather plenty of water is necessary. In picking, the large leaves ought first to be utilised, and on no account should the whole plant be cut off. When the foliage is small and the plants run to seed, they should be promptly pulled up, as they are of no further value, and if left, only exhaust the soil.

Winter Spinach requires exactly the same method of cultivation as the Spring and Summer varieties, except that the situation should be dry, *i.e.*, not waterlogged, and fully exposed to all the sun and light possible. About the middle of August will be early enough for the first sowing, following some exhausted crop, such as early Potatoes, or early Peas, thus never allowing the land to be idle. Early in September another sowing can be made; this will usually keep up the supply through the

winter, and as the Winter Spinach does not run to seed till Spring larger breadths should be sown. Even in winter an occasional Dutch hoeing between the rows will be very beneficial. In the Spring, when the plants begin to bolt, clear them away, or dig them in deeply for green manuring.

**Varieties.**—There are two types of the ordinary Spinach—the Round-Seeded and the Prickly-Seeded. The former is sown for spring and summer use, and the latter for autumn and winter. Improved Viroflay, a very fine variety of the Round-Seeded type, and strong vigorous habit, producing very large foliage in profusion under good culture. Victoria Improved Round, an excellent variety for spring, summer, or early winter use, having very broad thick foliage, and stands heat and drought much better than the ordinary Spinach. Long Standing Prickly, by far the best variety for sowing in August and September for winter use, as no amount of frost seems to injure it, and is of robust habit, keeping longer in use than any other variety, and producing plenty of large leaves of good flavour.

**Manure.**—A very light application of nitrate of soda at the rate of 1oz. to the square yard, immediately after the plants are thinned out in the rows, is excellent, but none should fall on the foliage.

**Pests.**—As a rule wireworm is the only enemy attacking Spinach. Soot or lime worked into the soil before sowing is a good preventative.

### **New Zealand Spinach.** (*Tetragonia expansa*.)

A most valuable substitute for ordinary Spinach on hot dry soils, where it is almost impossible to get the latter in summer. A rich deep soil and a sunny position are essential. The seed should be sown very thinly at the end of April or early in May where it is to stand, thinning out the plants to about 3ft. apart each way, as the habit is very spreading. In dry weather copious supplies of water or liquid manure will considerably increase the size of the leaves. The leaves should be picked and cooked after the manner of ordinary Spinach. A score or so of plants will produce a capital supply in the hottest weather, the quality and flavour being equal to that of the best Spinach. As this plant is an annual, it is necessary to sow every year. So far as we know there is only one variety of this. In cold districts, it is advisable to sow the seed in gentle heat, and plant out in the open early in May.

**SPINACH BEET.** (*Beta Cicla*.) *See Beet.*

**TOMATO.** (*Lycopersicum esculentum*.)

So important is this vegetable that every one possessing a garden contrives to have some plants, and goes to some trouble

to succeed. First, as to outdoor plants. The amateur possessing no glass will find it best to purchase plants in May, and plant them out at once, but supposing glass is available, seed should be sown thinly in a pot or pan of porous soil in February or early in March, in gentle heat, covering the seeds very lightly, and putting a piece of glass over the top of the pot or pan, to prevent evaporation. In a day or two the seeds will germinate, and the glass should then be removed from the pot, placing the latter in the lightest position in the greenhouse.

When the seedlings have made their first rough leaf, they should be potted singly into small pots of fairly good soil, and placed near the glass, to keep them dwarf and sturdy, taking care that they have all the water they require. When the pots are full of roots, the plants should be transferred to pots of a larger size, still keeping them near the light. No liquid manure should be given the plants; on the contrary they should be starved; this will cause them to develop flower buds, and fruit will be set. After gradually hardening off the plants, they may be put out against warm walls, fences, or even in rows across the garden. The object of starving the plants is to cause them to fruit early; if fed and grown on vigorously while in a small state they would produce an abundance of wood and foliage and little if any fruit, but having set one or two fruits before being planted out these act as a check, and plenty of flower and fruit are the result.

About 2ft. apart is a suitable distance for plants either against walls or in the open ground. Two stems to each plant are ample, and all side shoots should be rubbed out as soon as detected, thus concentrating the energy of the plant. Each stem ought to be securely fastened to a strong stake, and the plants should be gone over every week to see that the growing points are properly supported. About the middle of August the points of the shoots should be taken out, and no more growth permitted; this assists the fruit to swell and ripen before bad weather sets in. Any fruit that does not ripen may be used for making Tomato Chutney, or the stems and their fruit may be cut off before frost comes, and hung up in a light place to ripen. Such fruit, though not ripe enough for salads, will be useful for cooking. As regards the soil for outdoor Tomatoes, it is a mistake to have it too rich, as it tends to promote rank growth. A poorer soil is preferable, as it is quite easy to feed the plants when fruiting freely.

Plants grown under glass require similar treatment to that recommended for outdoor ones, except that for early crops the seed should be sown in January. The same process of starving should be adopted till the first truss of fruit is set, then the plants ought to be transferred into larger sized pots, using a compost of half good fibrous loam and one half dry well

decayed manure, ramming the compost quite hard, and taking care that it is neither wet nor sticky, but fairly dry. Firm potting is conducive to a short-jointed fruitful growth, whereas loose potting has the contrary effect. If the plants can be trained up wires against the roof of the greenhouse, then we should prefer a small bed of soil, or boxes about 1ft. wide, and 1ft. deep, and as long as they can be got, say about 3ft., putting one plant to a foot, and training one stem only to a plant. In the case of beds or boxes a compost of three parts loam and one part manure is best, as the root-run is greater than in pots. The training is the same as advised for outdoor Tomatoes, and all side shoots should be rubbed off. A temperature of 55deg. Fahr. and upwards, with sun heat, suits the plants admirably, with a free circulation of air on all favourable opportunities.

*Varieties.*—Amongst the very numerous varieties of Tomatoes, there are a few that stand out as exceptionally good. Carter's Sunrise is one of the greatest croppers and freest setters in cultivation, bearing long bunches of medium-sized, handsome fruits of first-rate flavour, even size, and bright scarlet colour. The variety is equally valuable for inside or outside culture. Ailsa Craig, a variety that quickly made itself popular by reason of its great bearing-form quality. The fruit is of moderate size, scarlet, and borne in long bunches; very good for inside or outside. Balch's Ayrshire, another splendid variety, very heavy cropper, with medium to large handsome scarlet fruits, that are not liable to cracking of the skin. Holmes' Supreme, an abundant bearing variety, with handsome scarlet fruit of fine flavour, and suitable for inside or outside culture. Golden Jubilee, a free-bearing, handsome, large yellow variety of great excellence. Golden Nugget, a small handsome yellow variety, most suitable for dessert purposes, and a wonderful free bearer under glass. Currant Tomato is a very decorative kind, bearing clusters of fruit the size and brilliancy of large Red Currants. Under good treatment the clusters are a foot or more long, with thirty or forty fruits to a cluster. Besides being ornamental, the fruits are good for dessert. Cherry Ripe, Golden Drop, and Dobbie's Garland, are all beautiful decorative varieties, and useful for dessert.

*Manures.*—Probably no vegetable requires more judicious feeding than the Tomato, and no plant is more benefited by a change of food. As already mentioned, feeding in any form is not advisable till the first fruit is set, then weak liquid manure may be given every week, and in addition, 1oz. nitrate of soda, and 2oz. superphosphate to the square yard, mixed together, may be applied once a month. Once a month, too, 1oz. sulphate of potash, and 2oz. kainit mixed together, and at



the same rate per square yard of border may be given. This is suitable for inside or outside. It should be understood that none of these manures ought to be applied when the soil is very dry and the plants are flagging, or more harm than good will follow, as it will induce cracking of the fruit. If the soil is at all dry, give a soaking of clear water first, then follow with the manure, and water it in.

*Pests.*—These seem to be on the increase annually. The worst are the Potato Disease, Black Spot (*Macrosporium Tomato*) and the Sleeping Disease (*Fusarium lycopersicæ*) amongst fungi.

It has been proved that none of these pests are carried through from one crop to another by means of the seed, but that they come from outside sources to the plants, and may be induced by faulty ventilation, improper feeding, and by putting plants in structures that had infested plants in before. The two first-named causes can be remedied by the grower easily enough, but in the latter case the house should be thoroughly cleaned, all surface soil removed, and fresh compost used, and if any signs of the fungus appear, paint the hotwater pipes with sulphur mixed with skim-milk to the consistency of paste, making them hot in the evening, and closing the house. This should be done for several nights in succession, this will usually stop the attack, and will also kill the White Fly that attacks the Tomato so badly sometimes.

### **TURNIP.** (*Brassica Napus*.)

A good rich soil is essential for this vegetable, and the ground should either have been well manured for a previous crop, such as Potatoes or Peas, or if poor, some manure should be forked in before sowing, while if a dressing of burnt garden refuse or soot can be worked in at the same time, all the better. Turnips should never follow any of the *Brassica*. A sunny open position is desirable, and in the South a small sowing may be made on a warm border at the end of March, making the drills 1ft. apart, and very shallow, so that the seed is not buried too deep to germinate. Thin sowing is also advisable, as the plants should be thinned out to 8in. apart in the rows. About the middle of April another sowing may be made. And if a sowing be made every six weeks or so up to the middle of September, not only will a constant succession of tender Turnips be obtained, but also a quarter to stand the winter outside that will be extremely useful for the cutting of the tops early in the year as a vegetable.

If very early Turnips are required, the seed should be sown broadcast in a cold frame early in February, thinning the plants out to 6in. apart.

*Storing.*—If “clamped” in the same way as Potatoes, or

stored in dry sand in a shed or cellar, they will keep plump and sound.

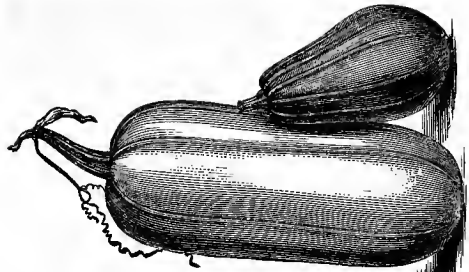
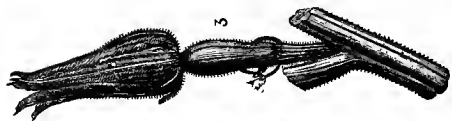
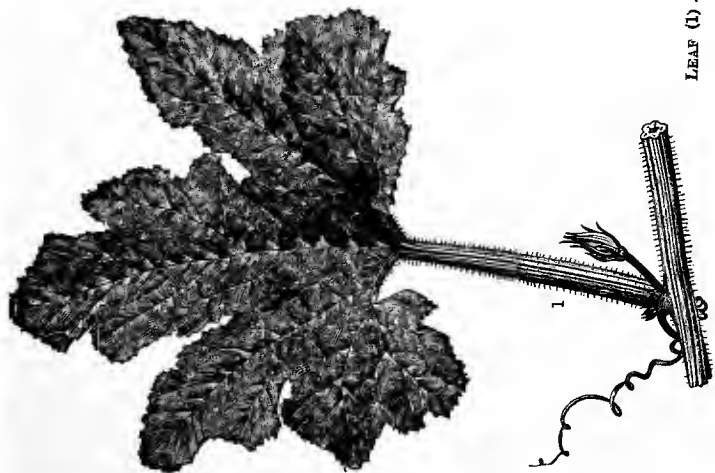
*Varieties.*—Jersey Navet in shape resembles a large white thick Radish, and is the best for sowing in a frame, or on an early border, as it is ready for use quickly, and possesses a particularly fine, delicate flavour; it is very largely grown in France. Extra Early Milan is a very flat variety, the lower part of the bulb is white, and the upper part is red. It is a very early variety, but only a small quantity should be sown, as the bulb soon spoils after attaining full size. Selected Model White, a splendid variety for sowing in April and May. It is of beautiful form, pure white in colour, comes into use quickly, and stands well without becoming hot in flavour. Dobbie's Selected Golden Ball is identical in form with Selected Model White, and is one of the best summer varieties; it is of exceedingly good quality, and one of the best for sowing in May or June. Selected Red Globe, a remarkably vigorous variety of excellent quality for sowing in June and July, but as it makes more foliage than many others, it should be sown in drills 15in. apart, and thinned to 1ft. apart in the rows. Laing's Swede, a selection of the ordinary Swede Turnip, but more refined, and of first-rate flavour; it should be sown in May. This and the last named are two good varieties for storing. Chirk Castle Black Stone, a particularly hardy variety for August and September sowing. The skin is black, and the flesh white; it is of good flavour, stands the winter well, and gives a profusion of tender tops in the spring.

*Manures.*—A dressing of 2oz. superphosphate and 2oz. kainit per square yard, worked into the soil before sowing, seems to suit this vegetable admirably. On hot sandy or gravelly soils, a mulch between the rows of short manure is very beneficial, and also an application of 1oz. sulphate of ammonia to the square yard put on when the bulbs are the size of walnuts.

*Pests.*—The Turnip Fly (*Phyllotreta nemorum*) is the worst enemy of this root. To prevent this doing any serious damage, it is a good plan to thin the plants early to the distances apart already named, and to spray the remainder with 2oz. carbolic soft soap, dissolved in 1gall. of water. Another plan is to dust the foliage with soot early in the morning while damp with dew. This causes the dust to stick, and drives the "Fly" (really a beetle) away. Mildew is sometimes troublesome, but rarely before the bulbs of the Turnip are of good size, and a spraying with  $\frac{1}{2}$ oz. sulphide of potassium dissolved in 1gall. of water will check the mildew.

## VEGETABLE MARROW. (*Cucurbita Pepo ovifera*.)

The culture of this is much the same as that for the Gourd, except that this vegetable does not require such a great root run.



LONG WHITE VEGETABLE MARROWS.

LEAF (1) AND MALE (2) AND FEMALE (3) FLOWERS  
OF LONG VEGETABLE MARROW.



As a rule a good barrow-load of manure, covered with 6in. or 8in. of soil is sufficient for each plant, but the surrounding ground should also be dug and manured, so that the roots may pass beyond the heap if they wish to do so. In dry weather an occasional thorough saturating of the soil with diluted liquid manure is highly beneficial. The shoots are best allowed to spread at will, nothing being gained by stopping the points, but a great deal is gained by cutting the Marrows while small. Not only are they better in quality, but it relieves the strain on the plants, which produce a much greater crop than when the fruits are not cut till they have attained nearly full size.

*Varieties.*—There are many varieties, but only a few of such all-round excellence as to be worthy of general cultivation. Of these the following are suitable for any garden: Sutton's Vegetable Marrow, a remarkably prolific variety with fruits rather below medium size, fruiting early, and of excellent flavour. Pen-y-byd—the fruits of this are almost round, of a cream colour, and borne in great abundance. Moore's Cream is still a universal favourite, being very prolific, of medium size, handsome, and fine quality. Long Cream, a marrow of rather large size, and of good flavour, but not so prolific as those named above. Improved Custard Marrow. The flavour of this is excellent, and the fruits are of ornamental shape, but it is not so profitable as most of the Marrows.

*Pests.*—Mildew is the worst pest, and is induced usually by cold nights, or changeable weather; drought at the root is also a condition favourable to its appearance. Immediately it is discovered the plants should be sprayed with  $\frac{1}{2}$ oz. sulphide of potassium in 1gall. of water.

**VEGETABLE OYSTER.** (*See Salsafy.*)

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## II.—MONTHLY CALENDAR OF OPERATIONS.

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### January.

In the early part of this month the careful gardener should consider what vegetables and salads he intends growing during the coming year. Having decided this point, he should go through his seed list, select the varieties best suited to his particular purpose, and place his order for the seeds with a thoroughly reliable firm as early in the month as possible. A judicious selection of the best vegetables and salads is most important, because if this be not a good one no amount of labour and skill will produce the finest results.

The vacant ground not already dug or trenched should be tackled at once if the weather is suitable, bearing in mind that snow should never be dug in, nor should the soil be too wet and sloppy. Ground dug or trenched under such conditions will be heavy and difficult to work all through the year. During frosty weather wheel manure on the ground, and undertake all similar operations while such weather continues, as it is better for the land, and the operations themselves are much easier than when the ground is soft. A period of frosty weather is also suitable for getting together litter or manure for hot-beds, which should be made up this month for early crops, and for bringing on seeds, etc. Hot-beds should also be made in heated brick frames for Asparagus, Seakale, etc., as well as for Potatoes and French Beans; and Radishes may be sown amongst the last named, as these will be all over before the Potatoes need all the space. A few pans of Leeks, Brussels Sprouts, Onions, Cauliflower, Cabbage, Tomatoes, and Lettuce should be sown, and put in frames on the hot-beds. Germination will quickly take place, and early plants be obtained for planting out on warm borders. On early borders, when the soil is in a nice pliable state, sow Broad Beans and Dwarf Peas. Mint may be taken up carefully from beds and planted in pots or boxes for forcing. And in bad weather look over all

roots and tubers stored away, removing any that are decaying, as they contaminate the others.

### **February.**

No hard and fast rule can be laid down as to when various crops should be sown and planted, as each grower must be guided by the district in which he lives, its earliness or lateness, and other circumstances; but this month should be a busy one in every vegetable garden. Weather and soil permitting Onions, Broad Beans, Early Peas, Parsnips, and Leeks should be sown; but if the soil is not in a nice workable condition, it is better to wait till March before sowing. Nothing is gained, and a great deal may be lost, by sowing seeds when the soil is sticky. Shallots should be planted this month, and autumn-sown Onions transplanted, and on warm borders seeds of Radish, Lettuce, Spinach, Short-horn Carrots, and in boxes early Celery, Cauliflower, Brussels Sprouts, Mustard and Cress, Tomatoes, and in pots Cucumbers, as well as such vegetables as Aubergines, or Egg Plants; while a further sowing of Dwarf French Beans should be made in pots for a succession. If very early Vegetable Marrows are required, seeds of these should also be sown. Any seedlings raised from last month's sowing ought to be pricked out in boxes or in frames, and more hot-beds may be made for keeping up a supply of Radishes, Carrots, Potatoes, Asparagus, French Beans, and further, batches of Seakale, Rhubarb, and plants for salad put in for forcing. Hot-beds should also be made up this month for Cucumbers and Melons.

When such crops as Celery are exhausted, the quarters they occupied should be levelled and dug, leaving the ground as rough as possible, so that it may be sweetened and pulverised by the weather; in fact, as any ground becomes vacant, digging should follow as quickly as possible. Now is a good time to order Pea and Bean sticks for the year, as they are much more durable than if cut later.

### **March.**

This is a very busy month in the garden, as so many crops should be sown or planted. Onions should be got in if not sown last month, and Pickling Onions should be sown at the end of the month. More Cucumber, Melon, and Vegetable Marrow, and also Gourd seed should be got in. The main crop of Carrots ought to be sown, and such things as Cabbage, Cauliflower, Broccoli, Early Savoy, Lettuce, out-

door Tomatoes, Herbs, Parsley, and at the end of the month Turnip-rooted Beet, should be sown on a warm border to give early supplies. Further supplies of Peas and Broad Beans should also be put in, and both early, mid-season, and late Potatoes should be planted this month, except in very cold exposed positions. There will be a good deal of pricking out of seedlings from seed sown the previous month, and it is imperative that this be done before they become drawn and weak. Peas just coming through the ground will be helped a great deal by a little ridge of soil being drawn up on each side of them, but not over them. A few twiggy shoots will not only break the cold winds, but support the plants. Even very dwarf Peas are benefited by these slight aids, as the tendrils of the plants cling to the sticks, and are thus supported. Asparagus beds should be cleaned and put in order for the season. Seakale may be planted or seeds sown, and ground that has been occupied by Broccoli, Kale, Turnips, Celery, or other crops, such as Winter Spinach, ought to be deeply dug, and, if necessary, well manured and made ready for Peas, Potatoes, and crops of a dissimilar character to the previous one. Litter should be removed from Rhubarb or Seakale that has been forced on the ground in the open, and a mulch of short manure forked into the ground. The aim should be to have no unoccupied space. Immediately therefore a crop is exhausted, clear it away, and put in another; never permit the ground to be idle.

### April.

Ground that has been occupied by Broccoli, Kale, or winter Turnips, should be cleared, and liberally manured, as it will be impoverished after such crops. Celery trenches may be made on such ground; or Peas may be sown in shallow manured trenches, and about the middle of the month it will be time to sow French Beans and Scarlet Runners, putting the first sowings in the warmest position, Longpod Beans can still be sown in the coolest part of the garden, and more Peas should be got in to keep up a succession. The same applies to Lettuce, Radish, Spinach, Turnips, and late Celery. The earliest sown Celery will soon be ready for planting out, and the trenches are best if prepared sometime beforehand. Lettuce should be planted on the ridges between the trenches. This crop likes such a position, and is always cleared away before the Celery needs earthing up. Any crops sown in boxes or frames should now be carefully pricked out in warm early borders, and protected from cold winds or frost by a light cover of Broom or Fir branches. Late Savoy, late Broccoli,



Cabbage, the main crop of Beet, Asparagus, Seakale, Herbs, more Cauliflower, &c., ought to be got in, and any unoccupied ground not needed for other crops, should be planted with late Potatoes. Early Peas will need staking, and if the soil is light, mulch after staking with strawy manure, and continue to sow Spinach between the rows of Peas and Runner Beans, at the same time as the latter are sown. Asparagus may still be planted any time this month, and is all the better for the crowns having 2in. or 3in. of growth. Take care that the roots are kept continuously moist from the time they are lifted till replanted, giving a good watering afterwards. Keep the Dutch Hoe going on all favourable occasions when the weather is dry.

### **May.**

Soil should be drawn up to Potatoes where the haulm is through the soil, to protect them from frost, and all tender crops like French Beans, Scarlet Runners, Vegetable Marrows, &c., should be sheltered by Fir branches or similar material on cold nights, as May is a treacherous month, and unless guarded the early sowings of the vegetables named may all be ruined. Asparagus beds should be looked over daily, and any "grass" large enough for use should be cut. It will also be a good plan to feed the beds with diluted liquid manure. More Peas, and also more French Beans and Scarlet Runner Beans, ought to be sown to afford a succession, while a further supply of Radishes, Lettuce, late Broccoli, Turnips, Spinach, and Cabbage, for autumn use may be sown. Ground should be got ready for planting outdoor Tomatoes at the end of the month, not making the soil very rich, otherwise rampant growth will result, and little or no fruit be produced. When the first fruits of the Tomatoes are set, then will be the time to feed. On the other hand, the ground can scarcely be too rich for Vegetable Marrows or Gourds, which should be planted out at the end of the month. Trenches should be made for the main crop of Celery, and the plants put in when large enough. Leeks also may be planted in trenches, exactly the same as for Celery. Thinning out of growing crops, such as Carrots, Onions, Beet, Parsnips, Parsley, ought to be taken in hand immediately the plants are large enough to handle, choosing for the work a period just after rain, thus inflicting little or no injury on the plants left in the rows. Give liquid manure or chemical manure to growing crops after rain, not when the soil is dry, as this frequently does harm. Keep the Dutch hoe at work to destroy weeds, and replant all ground as it becomes vacant

## June.

Vegetable Marrows, Ridge or Gherkin Cucumbers, Gourds, and Tomatoes not planted last month, should be got out as early as possible this month, or they will be too late to do any good. The latest batch of Celery ought to be planted out, and Lettuce sown very thinly on the ridges, thinning out the seedlings when large enough, but not transplanting. Plants so treated are not likely to bolt like those transplanted do when sown in hot weather. Late Cauliflower, early Broccoli, Kale, and the latest Brussels Sprouts should be planted, selecting showery weather if possible for the operation. If slugs are troublesome, strew a little soot or slaked lime round the newly put out plants. See that Tomatoes are securely staked, and all side shoots removed. Potatoes ought to be finally earthed up, and as early Potatoes, Peas, or other crops become exhausted, clear them away, and replace at once with those crops required to stand the winter.

Where young Onions are appreciated as salading, and young Carrots are also wanted, a sowing of each should be made. The last sowing of Peas ought to be made about the middle of the month. Further French Beans may be sown towards the end of the month, to provide late supplies; these will be found very useful when Peas are getting over. The earliest crop of Endive and Chicory will do well if sown towards the end of the month. Do not permit any plants to get congested and drawn up in the seed beds. Keep them planted out as they get large enough, and as the ground becomes vacant. Water all growing or newly planted stuff if necessary, and conserve moisture in the soil by keeping a loose surface by frequent hoeings, which also tend to keep down insect enemies and give a neat appearance to the garden.

## July.

During this month many crops will finish yielding, and too often they are permitted to be on the ground when all their usefulness is over. This is a great mistake, as such impoverish the soil, and are a fruitful source of insect and other pests. In the case of Peas and Beans the haulm should be burnt at once, and any other green crops could be taken to the compost heap and mixed with it for future use in the garden. Endive, Winter Spinach, Turnips, Lettuce, and Radish, should be sown; and Turnips and other crops recently sown should be thinned out. Continue to plant out late Cabbage, Savoy Cabbage, Kale, etc., as ground becomes unoccupied, as they

will prove very acceptable in the early months of the year. See to the outdoor Tomatoes every week, as they will need tying to the stakes, and side shoots will form in abundance, and the sooner these side shoots are removed the better for the crop. French Beans and Scarlet Runner Beans ought to be carefully gone over daily, picking off all pods that are fit for use; for even a few pods getting old and forming seeds will stop further production. If seeds are not allowed to form, the plants continue bearing indefinitely. Diluted liquid manure, or a dressing of chemical manure, is extremely valuable now for growing crops of all kinds. Shallots will be ready for lifting, and should be left to ripen in the sun. Early Potatoes wanted for seed will keep sound if lifted and exposed to the sun and air till they are green. Herbs cut and dried this month will be serviceable for use in the winter. The earliest crop of Celery should be thoroughly watered, and then earthed up.

### **August.**

Onions, Lettuce, Winter Spinach, Cabbage, Carrots for drawing young, and Turnips, should all be sown this month, earlier or later according to the district. All growths on outdoor Tomatoes should be stopped after the middle of the month, pinching out the point of the leading shoot, and taking out all side growths as they appear. Any growth made after this would be useless, and by stopping it all the vigour is thrown into the fruits.

Mushroom-beds ought to be made up, and store sheds thoroughly cleaned and overhauled, so that they will be in a fit state to receive such crops as need storing a little later on. More Endive ought to be sown, and the seed sown last month will now be ready for transplanting. American Land Cress sown now will prove a useful addition to the salad bowl in the winter, and as there is plenty of ground becoming vacant daily such valuable plants as Endive and similar crops may be largely planted. They will be appreciated exceedingly in the winter. Copious supplies of water are usually required for growing crops this month, and to save labour and keep the soil moist nothing equals the frequent stirring of the surface soil with the hoe. It is necessary to repeat this advice, as it is applicable to all soils and situations, and hoeing is not done to anything like the extent it ought to be. Look out for thrips on Peas, and mildew on Onions, and take prompt steps to check their ravages. The same applies to the Celery fly, which usually gets busy this month. See, too, that no weeds run to seed, or spoil the tidy appearance of the garden.

### September.

Spring-sown Onions will be ready to pull, and after thoroughly harvesting be fit for storing. Midsummer Potatoes and Turnip-rooted Beet will be ready to lift and store, taking care that the haulm of the former and the leaves of the latter are not left lying about, but promptly removed and burnt, thus reducing the risk of noxious diseases and pests increasing and multiplying. More Endive may be sown on a warm, sheltered border early in the month, and the earliest Endive may be put in a cellar, mushroom-house, or frame, for blanching. Lettuce for winter use should also be put in frames, and not coddled at all, leaving the lights off the frames, except on very cold nights or when it is very wet. Midseason and late Celery will require earthing up, always choosing a nice dry day for the work, as the Celery will keep much better than if earthed up in the wet. Leeks may likewise be earthed up, giving a good watering the previous day if the weather is dry.

There will be a good deal of vacant ground coming into use this month, and Cabbage, late Turnips for spring greens, Onions, and Winter or Prickly Spinach may very well occupy this ground. If all is not taken up by these crops, it will be a good plan to rake over the vacant land, merely scratching the surface, and sow agricultural Mustard seed very thickly. This will be up directly, and by the middle of October, or earlier, will be a foot high; it should then be dug in. It makes a capital manure, keeps down weeds, and is very unpleasant to insect pests in the soil; and that it is very beneficial will be proved by the crops following it in the following year.

### October.

Early in the month all Potatoes, Beet, and Carrots ought to be taken up and stored in clamps or frost-proof sheds, all the exhausted Pea and Bean haulm removed, and the ground cleared of weeds. Broccoli beginning to form heads ought to have the leaves tied up over the heads, or the large outer leaves broken and bent over them. This will protect them against seven or eight degrees of frost. Clear away the lower decaying leaves of Brussels Sprouts, Broccoli, and Kales. This will be better for the plants, and in a great measure obviate the unpleasant smell given off by these vegetables. Cut down Asparagus, and clean the beds, burning the tops and weeds in case any insect foes are present. Towards the end of the month Asparagus, Seakale, and Rhubarb may be lifted for forcing inside a warm structure or heated frames. Batches of

Endive, Chicory, and Dandelion may be lifted once a fortnight onwards for forcing in a mushroom house or other warm place,

Finish earthing up Celery, and as the earlier crops are lifted dig the ground roughly for exposure to the weather. Fill up the blanks in the autumn-planted Cabbage, and draw up a little earth to these plants. This will keep them steady in the soil, and at the same time protect them. Sow Mustard and Cress in boxes in heat, as it will be appreciated in a mixed salad. Plant out a small batch of Lettuce on a warm border, sprinkling soot over to ward off slugs. These will be useful for either lifting and planting in frames later, or to come on early in the following year where they stand.

### **November.**

The careful gardener, amateur, or professional, will consider what portions of the garden will be occupied by the various crops during the coming year, and begin this month by making his arrangements accordingly, digging or trenching the ground required for early crops first. Needless to state frosty weather should be selected for wheeling out manure or garden refuse on to vacant plots. Not only is the work easier, but the ground is not cut up, or made sodden, as is the case when the wheeling is done on a wet soil. If there has been any attacks of insects or fungi on any other crops, now is a good time to dig in quicklime. All digging or trenching done during the winter months should have the surface left as rough as possible. On wet days look over Potatoes stored in sheds for any diseased tubers, and bring in Celeriac early in the month, keeping it as cool as possible. Any Celery not earthed up should be finished without delay, and more Endive, Seakale, Asparagus, and Rhubarb may be brought in for forcing; make up another mushroom-bed inside. Sow Broad Beans on a warm border. Clear up the garden generally, cutting down the tops of Jerusalem Artichokes, and lifting the tubers, and protecting Globe Artichokes from frost with litter or strawy manure. Save all fallen leaves, and put them in a sheltered place where the wind will not blow them away. They will be most useful for helping to make hot-beds, or if not wanted for that, they will give leaf-mould later on.

### **December.**

Any alterations in the garden should be done this month, as they can be completed before the ground is wanted for cropping. Wheel out manure or decayed vegetable matter from the refuse

heap, and push on with all digging and trenching. Sow Tomatoes for early work under glass, also French Beans. Sewage tanks may be emptied, and the contents used in the trenches when digging the garden. In fact, there should be no waste, but everything of any value should be employed to enrich the soil. There is no object in sowing any outside crops this month, as the soil is so cold and wet that most seeds would perish, or be so weakened as to be of little value. Continue to put in batches of Endive, Seakale, and Asparagus for forcing.

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